

semester

1

Methods of Teaching

COURSE GUIDE

Associate Degree in Education/
B.Ed. (Hons) Elementary

2012



Higher Education Commission

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Higher Education Commission

Foreword

Teacher education in Pakistan is leaping into the future. This updated Scheme of Studies is the latest milestone in a journey that began in earnest in 2006 with the development of a National Curriculum, which was later augmented by the 2008 National Professional Standards for Teachers in Pakistan and the 2010 Curriculum of Education Scheme of Studies. With these foundations in place, the Higher Education Commission (HEC) and the USAID Teacher Education Project engaged faculty across the nation to develop detailed syllabi and course guides for the four-year B.Ed. (Hons) Elementary and two-year Associate Degree in Education (ADE).

The syllabi and course guides have been reviewed by the National Curriculum Review Committee (NCRC) and the syllabi are approved as the updated Scheme of Studies for the ADE and B.Ed. (Hons) Elementary programs.

As an educator, I am especially inspired by the creativity and engagement of this updated Scheme of Studies. It offers the potential for a seismic change in how we educate our teachers and ultimately our country's youngsters. Colleges and universities that use programs like these provide their students with the universally valuable tools of critical thinking, hands-on learning, and collaborative study.

I am grateful to all who have contributed to this exciting process; in particular the faculty and staff from universities, colleges, and provincial institutions who gave freely of their time and expertise for the purpose of preparing teachers with the knowledge, skills, and dispositions required for nurturing students in elementary grades. Their contributions to improving the quality of basic education in Pakistan are incalculable. I would also like to thank the distinguished NCRC members, who helped further enrich the curricula by their recommendations. The generous support received from the United States Agency for International Development (USAID) enabled HEC to draw on technical assistance and subject-matter expertise of the scholars at Education Development Center, Inc., and Teachers College-Columbia University. Together, this partnership has produced a vitally important resource for Pakistan.

PROF. DR. SOHAIL NAQVI,
Executive Director,
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How this course guide was developed

As part of nation-wide reforms to improve the quality of teacher education, the Higher Education Commission (HEC) with technical assistance from the USAID Teacher Education Project engaged faculty across the nation to develop detailed syllabi and course guides for the four-year B.Ed. (Hons) Elementary and two-year Associate Degree in Education (ADE).

The process of designing the syllabi and course guides began with a curriculum design workshop (one workshop for each subject) with faculty from universities and colleges and officials from provincial teacher education apex institutions. With guidance from national and international subject experts, they reviewed the HEC scheme of studies, organized course content across the semester, developed detailed unit descriptions and prepared the course syllabi. Although the course syllabi are designed primarily for Student Teachers, they are useful resource for teacher educators too.

In addition, participants in the workshops developed elements of a course guide. The course guide is designed for faculty teaching the B.Ed. (Hons) Elementary and the ADE. It provides suggestions for how to teach the content of each course and identifies potential resource materials. In designing both the syllabi and the course guides, faculty and subject experts were guided by the National Professional Standards for Teachers in Pakistan 2009 and the National Curriculum 2006. The subject experts for each course completed the initial drafts of syllabi and course guides. Faculty and Student Teachers started using drafts of syllabi and course guides and they provided their feedback and suggestions for improvement. Final drafts were reviewed and approved by the National Curriculum Review Committee (NCRC).

The following faculty were involved in designing this course guide: Zubaida Kifayat, F.G. Elementary College for Women, Skardu; Bilqeess Batool, F.G Elementary College for Women, Skardu; Alia Ayub, Sardar Bahadur Khan Women University, Quetta; Kifayat Khan, Hazara University, Haripur; Waheed Akbar, Hazara University, Mansehra; Mohammad Shaban, GCET Rawalakot; Shahida Iqbal Nizami, GCET (F) Muzzafarabad; Anwar ul Haque, GCET (M) Muzzafarabad; Dr. Abdul Ghaffar, GCET Faisalabad; Muhammad Altaf, GCET Lala Musa; Riazalai Gorai, GCE (M) Gilgit; Muhammad Nasir Khan, GCE (M) Gilgit; Muhammad Iqbal, GCE (M) Gilgit ; Asghar Ali Khan, GCET Kasur; Khalid Mahmood, GCET Shahpur Sadar; Tahseen Lateef, GECE (M) Lyari; Ali Asghar Khaskheli, GECE (M) Hyderabad; M. Faheem Kausar, GCEE Quetta; Rubina Masood, GCEE Quetta; Parveen Ashraf, GCET (F) Rawalakot; Shahnaz Bibi, GCET (F) DG Khan; Naeema Rasool, GCET Bahawalpur; Muhammad Siddique

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Date of NCRC review: 3 March 2012

Reviewers: Dr. Rizwan Akram, University of the Punjab, Lahore; Dr. Parveen Munshi, University of Sindh; Dr. Rehana Masroor, Allama Iqbal Open University; Dr. Nabi Bux Jummani, International Islamic University.

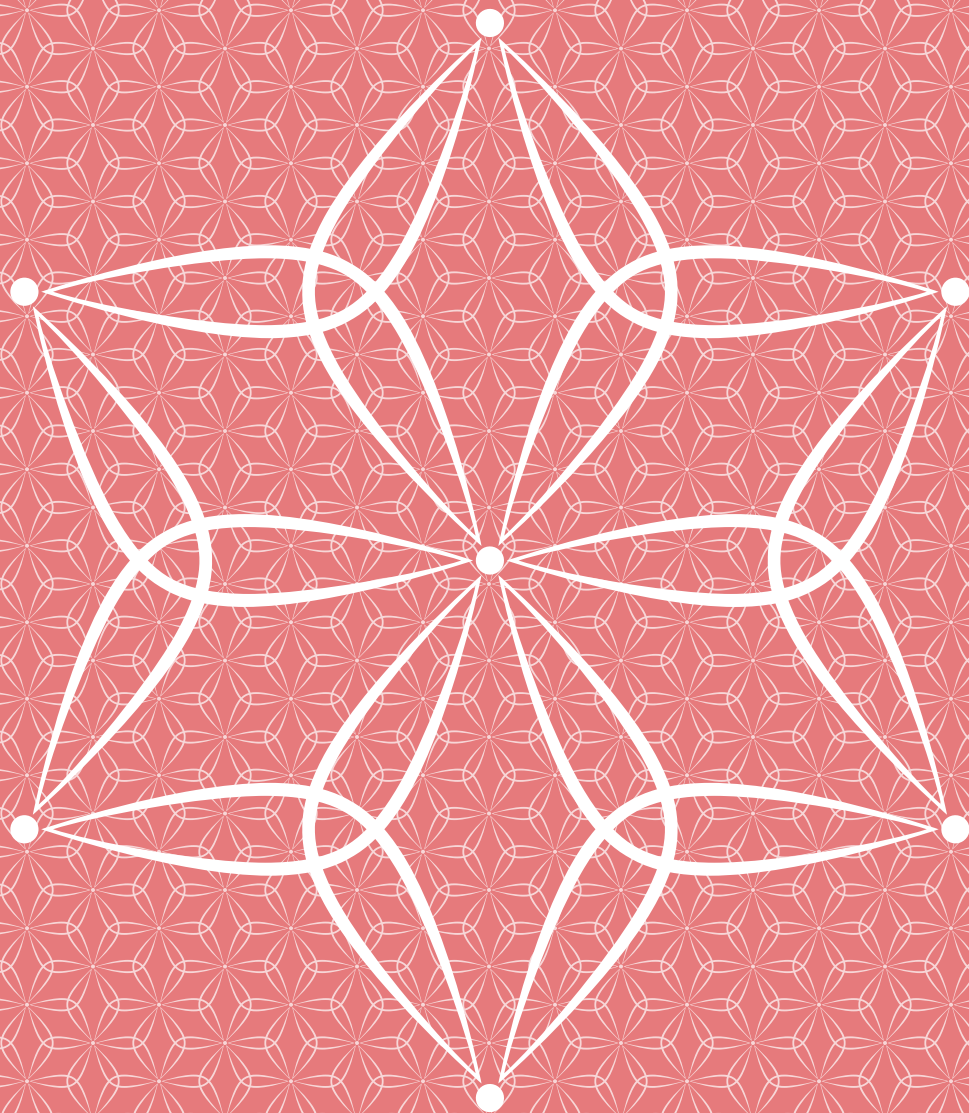


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Syllabus

METHODS OF TEACHING

METHODS OF TEACHING

Year/semester

Year 1, semester 1

Duration (hours)

48 hours (16 weeks)

Credit value

3 credits

Prerequisites

None

Course description

This course is an introduction to teaching methods used in primary schools. Because you have been a primary school student, you will recognize some of these methods. However, you know them from a student's perspective rather than from a teacher's perspective.

Teaching methods are often divided into two broad categories: teacher-centred methods (also called direct instruction) and learner-centred methods (also called indirect instruction or inquiry-based learning). An effective teacher knows several methods, some teacher-directed and others learner-directed. From among these methods, a teacher selects the one method or combination of methods most likely to achieve a particular lesson's objectives with a particular group of students.

Because teaching and learning interact, a course about teaching must also be about learning. The content and structure of the course is based on two strong claims about learning. First, learning results from what a student already knows, thinks, and does – and *only* from these actions of the student's mind. A teacher enables students to learn by influencing what the student *does to learn* but the student has to *do* it. Second, as students progress through school they should learn to become their own teachers. That is, students should learn *how to learn* using their teachers as models.

Course outcomes

By the completion of this course, Student Teachers will be able to do the following:

- Describe and discuss their personal theory of teaching and learning based on a critical analysis of implicit theories formed as Student Teachers.
- Summarize and debate the pros and cons of teacher-centred and learner-centred teaching methods and state their position as a teacher.

- Make records of structured, reliable classroom observations and draw conclusions based on these observations.
- Participate in a cooperative learning group that plans, teaches, and critiques a lesson.
- Create and critique plans for teaching and learning in primary school classes.

Learning and teaching approaches

This is your first opportunity to study teaching and, to a lesser extent, learning in school. You will soon learn that there are several sources of knowledge about teaching and learning, and you will be introduced to these sources. Because you have years of experience as a student but are only beginning to study teaching, this course will provide you with the opportunity to experience school with a focus on the teacher.

You will observe teachers at work in classrooms and interview two students in each classroom. You will start your student interviews with two primary school students and you will ask about their teachers outside the classroom. You will have a conversation with at least two experienced teachers. You will participate in planning and teaching a lesson to your university classmates, and you will write a plan for a lesson appropriate for primary school students.

Experiences of all types have more meaning when you reflect on the experience. In this context, reflection means turning your attention inward and searching for connections between the experience you have just had and past experiences. You turn to your own thoughts, experienced as mental images and words, to discover what you have learnt through the new experience. Reflection is aided by writing about your thoughts and by talking about them with other people. This course is organized so that you complete many of your assignments in collaboration with two or more of your classmates and you write three to five times a week in your journal.

You are expected to be self-directed in this course. This means that you will arrange school visits and find teachers and students to talk with away from school. You also will take an active interest in your journal and use it for the purposes for which it is intended. Finally, you will be a responsible member of any group of classmates with whom you work. The value of this course to your study of teaching will be proportional to the energy and time you invest in the course assignments.

Semester outline

1 UNIT 1:		Teaching and learning in school (2 weeks, 6 hours)
Week #	Topics/themes	
1	Sources of information about effective teachers	<ul style="list-style-type: none"> Your experience as a student Students currently in school Published research Observations in classrooms Reflections on classroom observation by yourself and with others Conversations with experienced teachers Theories about education and instruction The relationship between teaching and learning
2	Sources of information about learning in school	<ul style="list-style-type: none"> Your experience as a student Current students' self-descriptions Published research, especially in cognitive and educational psychology Observations in classrooms Reflections on student interviews by yourself and with others Conversations with experienced teachers Theories about learning Cultural influences on teaching and learning

You have been in school for at least 12 years. If you are like other Student Teachers, you probably have a personal theory about teaching and learning that was formed by your experience as a student. You may not be aware of all of these thoughts and beliefs, but some of them may interfere with learning to teach. In this unit, you will examine and write in your journal about your existing theory about teaching and learning so you become fully aware of it. Then you will compare your personal theory about teaching with other perspectives on effective teaching. You may want to modify your theories. You will also learn how to observe teachers and students at work in classrooms.

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UNIT 2:

Classrooms are busy places (2 weeks, 6 hours)

Week #	Topics/themes	
3	Sources of complexity in the classroom	<ul style="list-style-type: none"> Managing a crowded space Working with groups and individuals Managing different activities occurring at the same time Diversity among children Managing scarce resources Coping with unexpected events
4	Managing complexity	<ul style="list-style-type: none"> Learn names, interests, and learning strengths fast Establish rules and routines Group students Organize books and other materials for easy access Create pairs of students to help each other

Teaching is a universal human experience: parents teach their children; brothers and sisters teach each other; friends teach friends; employers teach employees; and colleagues teach each other. These examples of teaching usually involve a few students at the most and occur in the setting where the learning is used. For example, young children learn about collecting water with their mother at a stream or well, or a child learns a new game from a group of friends in a playground.

Classroom teaching is a special instance of teaching. First, the group is large and diverse, which creates management challenges for the teacher. Second, learning takes place in an unnatural environment, which may create motivation and attention problems for students. People who have not been responsible for teaching in a classroom have difficulty appreciating the complexity of the work. The purpose of this unit is to introduce you, as a prospective teacher, to the complex environment in school classrooms.

3

UNIT 3:

Teacher-centred and student-centred methods
(2 weeks, 6 hours)

Week #	Topics/themes	
5	Key concepts	<ul style="list-style-type: none"> Distinction between lower- and higher-order learning Outcomes from lower-order learning Outcomes from higher-order learning Instructional activities that enable lower-order learning Instructional activities that enable higher-order learning Direct instruction: a method to enable lower-order learning Indirect instruction: a method to enable higher-order learning Different roles for teachers and students
6	Model lessons	<ul style="list-style-type: none"> Template for direct instruction lessons Sample lessons Template for indirect instruction lessons Sample lesson Inquiry-based, problem-solving, and project-based learning: are these the same or different? Choice: teacher-centred, learner-centred, or both?

These two methods are a good place to start your study of teaching methods because they are usually seen in opposition to each other, though they can be complementary. Teacher-centred direct instruction is used to help students acquire knowledge and skills. Student-centred indirect instruction is used to help students understand the physical, social, and psychological world in which they live. In addition to different goals, the methods derive from different theories of learning and employ different practices. This unit is organized around the view that both methods belong in schools. *Knowing* and *understanding* are different but related mental processes; each is a legitimate goal of schooling for all students.

4

UNIT 4:

Lecture, demonstration, discussion, questions, and cooperative learning (3 weeks, 9 hours)

Week #	Topics/themes	
7	Cooperative learning	<ul style="list-style-type: none"> Peer teaching practice Rationale for cooperative learning Different models of cooperative learning Cooperative learning procedures Incentive structure of cooperative learning Limitations of cooperative learning Checklists as assessment devices
8	Lecture, demonstration, and discussion	<ul style="list-style-type: none"> Reasons to lecture Structure of a lecture Active lectures Structure of a demonstration Characteristics of good discussion Purposes of questions Questions in lectures, demonstrations, and discussions Wait time
9	Asking questions	<ul style="list-style-type: none"> Open and closed questions Lessons taught in class

As the previous unit illustrates, the method or practice that a teacher chooses depends on the intended goals for a particular group of students. Teachers have choices not only about teaching methods but also about how they group students for instruction: whole class, small groups, pairs, or individuals. A teacher's decision about grouping is usually determined by a lesson's goal or objective. For example, if a lesson requires that every student in the class have information that is not easily accessible and requires interpretation, the teacher will probably decide to construct a lecture followed by discussion, including questions, for the whole class.

This unit has ambitious goals and complicated logistics. Each prospective teacher will be assigned to one of six cooperative learning groups. Each group's task is to create six 15-minute lessons in total; each method (lecture, demonstration, or discussion) will be employed in two lessons. All six lessons will include questions. One person from each group will teach the lesson to the rest of the class during the third week of the unit (week 9). Three class sessions will be devoted to the lessons (two lessons per day), leaving 15 minutes for discussion of the lessons and 15 minutes for continued study of questioning strategies. The person playing the teacher from each group will be selected at random by drawing a name from an envelope at the beginning of class on the day of the lesson.

5

UNIT 5:

Teacher-student and student-student interactions that support learning in the classroom (2 weeks, 6 hours)

Week #	Topics/themes	
10	Constructive interactions between teacher and students	Respect Credibility Fairness (justice) Trust Interest Enthusiasm Adaptive teaching
11	Constructive interactions between students	Cooperative working relationships are central Examples of cooperative working relationships Feelings are the foundation of thought Importance of trust and confidence

While studying unit 2 in this course, you had the chance to watch a teacher and students at work in two different classrooms and discuss the observations with your colleagues. Hopefully, you could see that classrooms are unusual social environments. One adult is expected to allocate limited resources (space, time, learning tools, and attention) equitably among approximately 40 students.

Students are expected to sit for long periods and pay continuous attention to their lessons. Each student's competence is on public display all the time. The teacher is supposed to have eyes that rotate 360 degrees to know what each student in the class is doing most of the time. In this unit you will learn that a teacher and students can turn an unusual social environment into an environment that supports learning.

You and your partners will observe in two more classrooms during the next two weeks. In each classroom you will observe a teacher interacting with two students and those students interacting with each other. In each classroom the teacher will choose the students whom you will observe.

Week #	Topics/themes	
12	Sources of knowledge for designing lessons	<ul style="list-style-type: none"> Learning principles Pakistan's primary school curriculum Definitions of standards, goals, and objectives Examples of standards, goals, and objectives Bloom's Taxonomy of Educational Goals and Objectives
13	Assessment	<ul style="list-style-type: none"> Definition of assessment in schools Personal experience with assessment Assessment practices in schools in Pakistan Purposes of assessment Distinction between formative and summative assessment Examples of formative assessment
14	Instructional materials	<ul style="list-style-type: none"> Sources of instructional materials, including textbooks, in Pakistan School budgets for instructional materials Low- and no-cost materials to supplement or substitute for materials provided by the government Examples of materials created from local resources by teachers for mathematics, science, and literacy
15	Review and synthesis	<ul style="list-style-type: none"> Review of teaching methods and instructional and learning principles Review of students' current personal theories of teaching and learning Search for synthesis Complete instructional design project (lesson plan) Presentation of lesson plans designed by students

Teachers started using learning objectives (also called learning outcomes) to design lessons about 50 years ago. Previously, lessons were named by the topic rather than a learning outcome. For example, a topic would be more general, such as 'Adding two-digit numbers', rather than something specific, such as 'All students will correctly solve at least 8 out of 10 problems involving the addition of two-digit numbers'. Teachers have more than one way to write learning objectives.

You have seen different formats for lesson plans, and some plans have more parts than others. Though there are differences in the number of parts a plan may have, all lesson plans have objectives, or a sequence of activities (and necessary materials) for achieving the objectives, and a means for collecting evidence that students have achieved these outcomes. In this unit, you will learn how to write learning outcomes

and to choose or create assessments. You will use knowledge you have acquired about methods to create and write a teaching plan. You will learn to find or create the materials that you need to use your plan. You will do some work on the lesson plan in class with the two people with whom you have visited schools. During the last week of the unit (week 15) you will review what you have learnt about teaching methods and learning and instructional principles and then compare that knowledge with your current personal theories of teaching and learning.

7 UNIT 7:		Self-regulated learning (1 week, 3 hours)
Week #	Topics/themes	
16	Self-regulated learning	Becoming your own teacher Parents and teachers attitudes towards self-regulated learning Interdependence between learning and motivation Intrinsic and extrinsic motivation Mastery learning goals and performance learning goals

You know that learning is not confined to school. Children learn to walk and talk before they go to school. People continue to learn after they go to work. Ultimately, people learn throughout their lives. When you think about your own experience in school, you will probably also conclude that as you progressed through school, the work got harder and you had more responsibility for learning. (Learning in school can also be called studying.) The fact that learning is continuous in people's lives is partly responsible for the belief that children should 'learn how to learn' while they are in school.

The purpose of this unit is to introduce you to the process of learning how to learn. You will probably become aware of mental actions that you take without thinking about them (e.g. ensuring that you understand what you are reading in preparation for a test.) As you study the unit, try to think of yourself both as a student (which you are) and as a teacher (which you are becoming) because you are learning about mental actions that you will teach your students.

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M. Boekarts, *Motivation to Learn (Educational Practice Series No. 10)* (Geneva: International Bureau of Education, 2002).

➤ <http://www.ibe.unesco.org/en/services/online-materials/publications/educational-practices.html>

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➤ <http://www.ibe.unesco.org/en/services/online-materials/publications/educational-practices.html>

West Virginia Department of Education, 'Examples of Formative Assessment', <http://wvde.state.wv.us/teach21/ExamplesofFormativeAssessment.html>, accessed 5 March 2013.

Grading policy

A variety of assessments should be used to assess Student Teachers learning. It is recommended that course work count towards at least 50% of the final grade. Instructors will advise at the start of the course about which pieces of course work (assignments) will be graded. The remainder of the grade will be determined by exams at the middle and end of semester.

Course assignments

Reflective journal

Each Student Teacher will need a spiral-bound notebook to use as a reflective journal. This journal will be used for specific assignments (e.g. development and continuous revision of a personal theory of teaching and of learning) and for classroom observations. In sum, the journal will function simultaneously as a repository for certain assignments and as a diary for recording experiences connected with the course (e.g. classroom observations). Advise Student Teachers either to leave a wide margin when they write or to leave one side of each page blank so that you can record your reactions to their work and they can go back and record their own reactions to text they have written earlier (e.g. personal theory of teaching and of learning).

Classroom observations

The course includes nine classroom observations. The course syllabus indicates that Student Teachers may have to locate the schools in which they will observe. If the teachers approve, form triads among the class so that three people will observe in the same class at the same time. Each triad should remain together throughout the semester. Observing in triads has two purposes.

First, it allows for a richer conversation about the observation, and second, it allows the Student Teachers to talk about and reflect on teaching and learning with colleagues. Hopefully, this habit will extend to their teaching careers. Explain that observing and recording what they see is necessary but not sufficient. The value of the observations comes from talking and thinking about them.

The nine observations are planned for units 1, 2, and 5. Each set of observations has a different purpose. The first two observations are of teachers' actions during a lesson using a checklist created from research on teacher effectiveness. Two teachers are to be observed in different class levels (in classes 1–8) and different subject matters (e.g. maths, Urdu, science). The third observation is of a teacher's movement in the classroom during a lesson. The fourth and fifth observations are in the same classroom and are of a teacher interacting with two children, one who is academically in the top quarter of the class and one from the bottom quarter. The remaining four observations occur in two classes, again with children of varying ages and with different subject matters. Classes will be selected based on teachers' selections of two children, one of whom is considered more popular and one who is considered less popular. Here the interaction of the two target children with other children in the class will be observed. Each type of observation (teacher alone; teacher–child interactions, and child–child interactions) requires data collection forms, the forms for which are included among the handouts.

Interviews with children

The course requires 10 interviews with children. The first interviews are with two primary school children who are to be asked their views about good teachers. Then each triad will interview four children (two high achievers and two low achievers) during lessons in classes where the first observation was conducted. Student Teachers will create their own interview questions. The purpose of the interviews is to learn

children's opinions about school, the teacher, and of themselves as students. The other four interviews are with two popular children and two less popular children, one of each from a different class. The interviewers will determine the questions, which can be the same as those used for the first set of interviews. For each set of interviews, the interviewers might consider asking each child, 'If you could change one thing about school and one thing about the teacher in the class we just visited, what would it be?' Summaries of these interviews, including the questions asked and interpretations, become journal entries.

Teaching a lesson

This assignment is described in the course syllabus. It is a group project, and its purpose is twofold: to plan and critique a lesson using a lecture, discussion, or demonstration and to work in a group using cooperative learning.

Divide the class into six groups. Prepare six slips of paper, two with 'lecture' written on them, two with 'discussion', and two with 'demonstration'. Put them in a bag or envelope. Have one member from each group draw a slip from the envelope. The label on the paper indicates the method the group will use to build a lesson appropriate for their university classmates.

Each member of the group will participate in planning the lesson as a cooperative learning experience. At the beginning of the class session when the lesson is taught, the names of that group's members will be put in an envelope and one name will be drawn at random. That person will teach the lesson to the class. In other words, everyone will need to be prepared to teach, though only one person will actually give the lesson. Student Teacher Groups will be given rubrics to evaluate the lesson. A critique will follow each lesson and will include group members who planned the lesson. Each group will be responsible for providing evidence that every member of the group participated equally in preparing the lesson.

Designing a lesson

It may seem strange to plan and teach a lesson before learning how to design a lesson. This is a more detailed plan than the one used to teach using a lecture, demonstration, or discussion. It is hoped that using a simple plan involving one method will make it easier to create the more comprehensive plan.

This is also a group experience for triads. There may be some advantage in keeping the classroom observation groups together for this project. (There are also advantages to working with a new group.) The topic for the lesson is nutrition. The lesson is for children in class 4. It will be helpful if you can find class-4 textbooks containing chapters on nutrition and put them on reserve for this course in the library. Student Teachers should also be encouraged to collect teaching materials for this assignment on their own.

UNIT PLANS



General course notes to faculty

Five documents on learning and teaching commissioned by the International Academy of Education in Brussels, Belgium and the International Bureau of Education in Geneva, Switzerland, both of which are affiliated with UNESCO, are among the learning and teaching resources collected for this course. These documents are assigned to specific units in the course. The five documents are:

M. Boekarts, *Motivation to Learn (Educational Practice Series No. 10)* (Geneva: International Bureau of Education, 2002).

➤ http://www.ibe.unesco.org/fileadmin/user_upload/archive/publications/EducationalPracticesSeriesPdf/prac10e.pdf

J. Brophy, *Teaching. (Educational Practice Series No. 1)* (Geneva: International Bureau of Education, 1999).

➤ http://www.ibe.unesco.org/fileadmin/user_upload/archive/publications/EducationalPracticesSeriesPdf/prac01e.pdf

M. J. Elias, *Academic and Social-Emotional Learning. (Educational Practice Series No. 11)* (Geneva: International Bureau of Education, 2003).

➤ http://www.ibe.unesco.org/fileadmin/user_upload/archive/publications/EducationalPracticesSeriesPdf/prac11e.pdf

B. Rosenshine, *Principles of Instruction (Educational Practice Series No. 21)* (Geneva: International Bureau of Education, 2010).

➤ <http://unesdoc.unesco.org/images/0019/001906/190652e.pdf>

S. Vosniadou, *How Children Learn. (Educational Practice Series No. 7)* (Geneva: International Bureau of Education, 2001).

➤ <http://unesdoc.unesco.org/images/0012/001254/125456e.pdf>

➤ Alternatively, go to: www.ibe.unesco.org and search for the Education Practice Series.

In these unit plans you will notice that sometimes the text is written for the Instructor and at other times it is written for Student Teachers. There are two reasons for this. First, text that also appears in the syllabus is written for Student Teachers. Second, when text in session descriptions is written for Student Teachers, it indicates that they should do something. This is not an effort to control what you say to Student Teachers. It is a device to signal that they need to be told what or how to do something. It is one way, out of many, that you might tell them how or what to do.

After the first unit, in which sessions are described, only two sessions are described in detail for each unit, as there is always more than one way to teach a lesson. Though the session descriptions read like prescriptions, they are not intended as such. The assumption is that one relatively detailed session as an example will stimulate your thoughts about other ways to conduct a class session. Please do not feel that you have to use the session descriptions included in these unit plans. Use them if you choose. You know the subject and you know your students, so take these class sessions in the

direction that makes the most sense to you. This course will be revised based on your experience with it and student opinions. It will be helpful to the revision process if you record briefly (in a log) your decisions about how to conduct class sessions. If you create your own plan for a particular session, describe it briefly in the log. If you make a particular change(s) in the existing description of a session, describe the change.

Unit 5, Teacher–student and student–student interactions that support learning in the classroom, has an observation scheme (Handout 3 ‘Teacher Observation Form’). When you have a chance, it is probably wise review it and ensure that Student Teachers can do it. Simplify it if necessary.

When you reach Unit 7, Self-regulated learning, you will notice that the rationale for self-regulated learning, though complementary, is different in the unit description and in the Notes to faculty for week 16. In the unit description, the rationale is to prepare people to learn when they are no longer in school. It portrays a gradual increase in self-regulated learning as children progress through school. In the faculty notes, the rationale is that all learning is self-determined and self-regulated, which should be made explicit to help people become more effective and efficient teachers (of themselves) from the time they enter school. In other words, teaching children to become their own teachers should be a major goal of schooling. Ultimately, the difference in rationales is a difference of emphasis, not a difference of process.

‘Self-regulated learning’ may be a better phrase than ‘active learning’ to describe the student’s role in learning. If you believe that learning is inferred from change in a student’s knowledge, skill, and attitude, then learning is by definition ‘active’ – and ‘active learning’ becomes redundant.

There are two important concepts that have been intentionally omitted from Unit 7: metacognition and self-efficacy. If you feel that was a mistake, go ahead and include these concepts in your teaching. However, these concepts will be introduced in the Educational Psychology course.

UNIT



TEACHING AND
LEARNING SCHOOL

Unit Overview

This unit has several purposes, including the following:

- to orient Student Teachers to the functions of a reflective journal and show them how to organize it
- to initiate the process of keeping a professional journal
- to introduce Student Teachers to the various sources of knowledge about teaching and learning
- to engage Student Teachers in the process of selecting teacher actions to observe
- to learn procedures and principles of classroom observation and conduct observations
- to determine through discussion what their observational data say about the presence of actions associated with teacher effectiveness in the classes they observe
- to initiate discussion about the relationship between teaching and learning and cultural influences on teaching and learning.

Learning outcomes for this unit

By the end of this unit, Student Teachers will be able to the following:

- reflect on their own learning about learning to teach
- make entries into a professional journal
- draw conclusions from the teacher effectiveness research and explain its limitations
- conduct a simple structured classroom observation
- summarize a simple set of data from classroom observations
- list the seven important principles of learning.

Unit resources

S. Vosniadou, *How Children Learn. (Educational Practice Series No. 7)* (Geneva: International Bureau of Education, 2001).

➤ <http://www.ibe.unesco.org/en/services/online-materials/publications/educational-practices.html>

West Virginia Department of Education, 'Examples of Formative Assessment'

➤ <http://wvde.state.wv.us/teach21/ExamplesofFormativeAssessment.html>, accessed 5 March 2013.

Handouts

- Handout 1 'Summary of Conclusions from Teacher Effectiveness Research'
- Handout 2 'Principles and Procedures of Classroom Observation'
- Handout 3 'Teacher Observation Form'
- Handout 4 'Direct Instruction'
- Handout 5 'Social Constructivist Learning Theory'
- Handout 6 'Seven Principles of Learning'

Week 1: Sources of information about effective teachers



Sub-topics

- Your experience as a student
- Students currently in school
- Published research
- Observations in classrooms
- Reflections on classroom observation by yourself and with others
- Conversations with experienced teachers
- Theories about education and instruction
- The relationship between teaching and learning

Week 1, session 1 lesson

Today in class (5 minutes)

At a rapid pace, call on 12 Student Teachers at random and tell them to state the one thing about teaching that each most wants to learn. Move so quickly that they cannot deliberate about it. If a Student Teacher hesitates, call on someone else.

Introduce the course (2 minutes)

Expanding on the course description, tell Student Teachers that this will be the first opportunity they have to study teaching. Remind them that though they have spent thousands of hours in school as students, their beliefs about teaching remain unexamined. The intent of this course is to help them think, write, and talk about these implicit beliefs and compare them against what they observe in classrooms.

Quick write (1 minute)

Give each class member an index card. When everyone has one, give them less than a minute to write on the card one thing about teaching that they most want to learn. Collect the cards and tally them later. This exercise is not precise, but it will force Student Teachers to respond with the first thing that comes to mind, and you may get a glimpse of the knowledge they already have about teaching. Because the action in class is fast during these first few minutes, you should have their attention.

Review the syllabus (10 minutes)

Use the summary of experiences they will have outside the university classroom in 'Learning and Teaching Approaches' as the basis for this. Explain to Student Teachers that they have to make their own arrangements for classroom observations. Note that they will be given instructions about observation in classrooms. Invite questions.

Explain the function and organization of the reflective journal (8–10 minutes)

This is important. Teaching Student Teachers how to reflect on experience and to establish the habit of writing in a journal are two important goals of this course. Use the description of journal writing, specifically in reference to reflection, in the course assignments section in the course syllabus.

Writing (15 minutes)

Student Teachers will make their first entry about their existing personal theory of teaching in their journals

Pair-share (5 minutes)

Student Teachers will form pairs and share they believe is the most important point in their current theory of teaching.

Closing (12 minutes)

Talk about homework assignments. Be sure that Student Teachers understand each assignment. Ask Student Teachers what they learnt in class today. Select a volunteer to answer. If there is time, ask for other responses.

Week 1, session 1 homework**Instructions for Student Teachers****Activity 1: Write in your professional journal**

Expand on your personal theory of teaching in class. Have it prepared before the next class session.

Activity 2: Read 'Summary of Conclusions from Teacher Effectiveness Research'

Write a two-paragraph summary of the research and bring it to the next class. If there are individual words or teacher actions that you do not understand, make a note of them in your journal so that you may ask questions later. Come to the next class prepared to discuss the research.

Activity 3: Interview two primary school students about their views of good teaching

Among family and friends, find a student in a lower primary class (1–3) and a higher primary class (4–8), and ask each what they think makes a good teacher. Interview them individually and probe for several responses. Record their answers.

Download ‘What Makes a Good Teacher? Opinions from Around the World’ from the UNICEF website (<http://www.unicef.org/teachers/teacher/teacher.htm>) and compare your students’ responses to responses from students all over the world. Write a two-page paper comparing your students’ responses with those from students from other countries. Most importantly, compare your students’ responses with your current personal theory of teaching. Did they say anything that you might want to include in your theory? Bring your paper to the next class and give it to the Instructor.

Week 1, session 2 lesson

Today in class (7 minutes)

This course is the first chapter in a story about learning to teach, and each class member is the main character in his or her version of the story. All stories share a common narrative theme: exploring teaching. To keep that narrative alive in Student Teachers’ minds, begin each class session with a brief review of the previous class and end each class with a review of the class that has just finished. Ask for a volunteer to provide their recollections and give that person two minutes to speak. Ask if anyone wants to add to the review. Choose no more than two and give them each one minute to speak.

Tell Student Teachers that they are to leave their student interviews papers (previous session’s homework) on your desk at the end of class.

State the purpose of this class session: to discuss the results of the teacher effectiveness research they read for homework (‘Summary of Conclusions from Teacher Effectiveness Research’) and to create a list of teacher actions associated with high student achievement to enter on the ‘Teacher Observation Form’. During week 2, the observation form will be used in two observations in nearby primary school classrooms in order to learn which of these actions are taken by primary school teachers in Pakistan.

Preparation for small-group work (10 minutes)

Put Student Teachers in groups of three. Tell them this is a permanent grouping for classroom observations. Ask if there are pressing questions about the ‘Summary of Conclusions from Teacher Effectiveness Research’ they read for homework. Keep questions and answers brief. After answering questions, put *one* of the actions from this sample list of teacher actions on the board.

- If children do not learn, effective teachers change the lesson.
- Time in school is used for lessons, not for classroom management.
- Lessons proceed at a pace that holds childrens' attention.
- The teacher moves continuously around the room to see each child's work.
- Review is included in each lesson.
- The teacher assesses each child's progress frequently.
- The teacher asks questions that require thinking.
- The teacher links new information to child's prior learning.
- The teacher builds learning in small steps.
- The teacher encourages children to take responsibility for learning.
- The teacher demonstrates skills to be learned.
- The teacher explains concepts.

Discuss the action you wrote on the board. Ask for a volunteer to contribute another action from the summary. List all contributed actions on the board. If they are not suggested by Student Teachers, add the remaining actions on the list above. Shape answers into short declarative statements similar to those in the list of actions above.

Give each group of three Student Teachers, two copies of the 'Teacher Observation Form' and tell them they will have 20 minutes to create one list of 10–12 actions on the form. Suggest that they start by discussing the summaries they wrote for homework.

Small-group work (20 minutes)

Move from group to group as the Student Teachers work. Answer their questions, review the actions they have listed, and help them, if necessary, revise statements of action that are too long or vague. If a group is having trouble getting started, give them another prompt from the 'Sample List of Teacher Actions', or ask someone in the group to explain an action in the research summary and help the group put that explanation into writing. If the work is lagging in all groups, bring them back together and, working with what they have, help them construct one list. (Have chart paper taped to an appropriate wall surface in preparation for the next step in the lesson.)

Whole-class work (15 minutes)

Choose two Student Teachers to lead this step in the lesson: one will be a recorder and one will facilitate the presentations. One member of each group will read that group's list. The first list will be recorded on chart paper as quickly as possible.

Actions from the remaining lists will be recorded only if an action has not already been read. However, the recorder will place a tick by each action as it is repeated by multiple groups. This will produce a frequency count of the number of times a particular action has been listed.

Closing (8 minutes)

Ask for a volunteer to summarize today's work. Ask two more volunteers to indicate whether working with the teacher effectiveness research today altered their personal theory of teaching. If so, they should state how their personal theory changed. Tell Student Teachers to leave their summaries of the teacher effectiveness research and their interviews with two children on your desk as they leave the classroom. Remind them to put their names on both papers. Review today's new homework assignments.

Week 1, session 2 homework

Instructions for Student Teachers

Activity 1: Professional journal work

If your interviews with children and your study of the teacher effectiveness research raise questions or issues about your personal theory of teaching, make notes to that effect in your journal. Think about those notes for two or three days before you consider making a change in your theory of teaching. If the interviews and research cause you to think that your theory may contain a misconception of teaching, be sure to note that.

Activity 2: Interviews with two experienced teachers

If possible, return to the primary school you attended and identify two teachers with whom you want to speak. Ask them what they think makes a good teacher. If they are available to talk with you separately, tell them that you have decided to become a teacher and are researching traits and actions of teachers whose children learn well in school. As you did with the children, make notes of their answers and then write a two-page paper reporting on their views of good teaching. If you cannot get to your primary school, find two teachers among family, friends, or neighbours and interview them. (The interviews do not have to take place in a school.) Bring this paper to the next class.

Activity 3: Read Handout 2 'Principles and Procedures of Classroom Observation'

Read this handout before the next class. You are going to conduct two classroom observations next week and you need to be prepared for them. Bring a list of any questions you have about the information in the handout to class and be prepared to discuss the conduct of an observation with your two partners.

Activity 4: Obtain permission to observe two teachers in a school near your home or university

If you have to find classrooms to observe on your own, do that before the next class session. You will have to work with your two partners. Remember that you must have permission from the teacher and the school to do this. If you need an official request from your course instructor, ask the school official if you can bring it with you on the day of the observations.

NOTE TO FACULTY: The lesson that you just taught illustrates an important point. As you are asking for volunteers to answer questions and participate in class activities, keep a record of which Student Teachers participate in each class session. This is important in order to ensure that every student in the class participates and that everyone is given that opportunity. Also, you can use class participation as one criterion for determining students' grade.

When you read Student Teacher papers for this unit, try to identify potential connections between sources of knowledge about teaching and learning that the Student Teachers are exploring and their personal theories about teaching and learning.

Week 1, session 3 lesson

Today in class (15 minutes)

Examine the list of teacher actions that was compiled after the last class. Have that list pinned to a wall or on the board so that everyone can see it.

Remind Student Teachers that these are the actions they will look for from the teacher during next week's observations. Ensure that Student Teachers understand everything on the list, and elicit and answer any questions they may have. Their observations can only be as accurate as their understanding of the actions they are supposed to observe. As questions are raised by the class, turn to the rest of the class and ask if another Student Teacher can provide the answer. Having Student Teachers answer each other's questions may foster understanding more easily than if you answer, though you will probably have to answer some questions. Tell the class that you will enter the list on the observation form, make copies, and give each of them two forms in the next class.

Small-group work: studying the observation procedures (20 minutes)

Have Student Teachers sit in their observation group to discuss the procedures for next week's observations. Check that they know how to use the observation form. They should describe its use one at a time to each other and the two listeners in each cycle should pay very close attention to their partner's description. It is important to know that the observation interval is five minutes and that during that interval the observer needs to be mindful of the full list of actions. If any of those actions is seen within a five-minute interval, the appropriate box should be ticked on the same line as the action. No action should be ticked more than once in a five-minute interval. Remind Student Teachers that if the teachers engage in very few actions on the list, they should note their observations on the back of their form (or a separate piece of paper) and describe what the teacher's actions during the lesson. The partners should also present each other with any questions about the observation they may have. Stop the group work after 15 minutes and tell each class member to write the list of procedures for conducting this observation in chronological order.

Small-group work: memorizing the list of teacher actions (15 minutes)

Explain to Student Teachers that the hard part of this observation involves watching the teacher teach and, at the same time, remembering to observe specific actions and to keep track of time. This involves doing three tasks at once, which will tax their

capacity for attention. Tell them that memorizing the list of actions – along with key words – will help reduce the burden of multitasking.

Divide Student Teachers into groups of three. Ask them to copy the list from the chart paper on the wall and to divide it into thirds. Each group member will work with one-third at a time.

Ask each group member to memorize their third of the list. When they think they have memorized it, they should ask the other two group members to test them. When they can remember all the items correctly three times, they should move on to the second and third set of words and repeat the same procedure.

If time allows, group members should try to recall the complete list.

Closing (10 minutes)

Ask for a volunteer to summarize the class session in two minutes. Ask for other volunteers to indicate when they felt most engaged in the lesson and least engaged in the lesson. Each should take one minute. Explain to the class that two full class sessions will be devoted to classroom observations. Given the fact that there is so much to learn about teaching, two sessions may seem too much.

Explain that learning to observe teachers and students carefully is an important to learning the art of teaching. Remind them that these observations are an important source of knowledge about teaching and teacher effectiveness.

Review the homework assignments. Return the papers submitted at the end of the previous class and tell students to leave their papers reporting on their interviews with teachers on your desk as they leave the classroom.

Week 1, session 3 homework

Instructions for Student Teachers

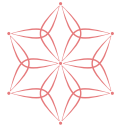
Activity 1:

Continue memorizing teacher actions in preparation for classroom observation

Using the memorizing routine, continue to study the list of teacher actions on the 'Teacher Observation Form'. You may not achieve perfect recall during the observation, but you will find it easier to watch and record accurately at the same time.

Activity 2: Read Handout 4 'Direct Instruction' and Handout 5 'Social Constructivist Learning Theory'

You are studying sources of knowledge about teaching and learning. In these two handouts, you will encounter another source of knowledge about teaching and learning: theory. A theory is a system of principles, ideas, or speculative thoughts intended to explain something. Read these two handouts and come to class prepared to thoughtfully discuss theory as a source of knowledge about teaching and learning.



Week 2: Sources of information about learning in school

Sub-topics

- Your experience as a student
- Current students' self-descriptions
- Published research, especially in cognitive and educational psychology
- Observations in classrooms
- Reflections on student interviews by yourself and with others
- Conversations with experienced teachers
- Theories about learning
- Cultural influences on teaching and learning

Week 2, session 1 lesson

Today in class (5 minutes)

Randomly select a class member and ask that person to give a two-minute summary of the last class. Randomly select additional Student Teachers to describe (in less than a minute) the most valuable idea or skill learnt in the last class.

Tell Student Teachers their reports of conversations about good teaching with two teachers can be picked up from your desk at the end of class.

Remind Student Teachers that in this unit they are studying sources of knowledge and beliefs about teaching and learning. The purpose of today's class is to explore theory as an influence on decisions about teaching. A theory is a system of principles, ideas, or speculative thoughts intended to explain instruction or learning. We will use direct instruction (an educational theory) and social constructivism (a learning theory) as examples.

Assessing understanding of direct instruction (10 minutes)

To start the exchange, discuss the key concepts in Handout 4 'Direct Instruction' and ask a few questions. Hopefully, the questions will help Student Teachers think about the teaching practices this theory suggests.

Key concepts of this theory include knowledge as an external object acquired by the human mind, learning involves a change in observable behaviour, and learning is caused by teacher-controlled external events (refer to Handout 4 'Direct Instruction').

Ask the following questions to prompt class discussion:

- Who is responsible if a student doesn't learn?
- What happens to the student–teacher interaction if a student doesn't learn?
- What type of learning outcomes is direct instruction most effective for achieving?
- For which of these teaching objectives might you use direct instruction: using a microscope effectively, writing an original short story, building a winning science fair project, distinguishing war from aggression, or typing at the rate of 25 words per minute?

Small-group work (15 minutes)

Assign Student Teachers to groups with five students each. Give them 10 minutes to discuss learning objectives that can be achieved through direct instruction and to write them down. After 10 minutes each group will report their conclusions to the rest of the class. Student Teachers will vote on the accuracy of each objective in each group's report by raising their hands. If an inappropriate learning objective is reported, call on a student teacher from one of the other groups to explain why that particular objective cannot be achieved with direct instruction.

Assessing understanding of social constructivism (10 minutes)

To start the exchange, discuss the key concepts in Handout 5 'Social Constructivist Learning Theory' and ask a few questions. Hopefully, the questions will help Student Teachers think about the teaching practices this theory suggests.

Key concepts of this theory include the mind constructs knowledge from experience—the mind does not acquire knowledge; children learn as a result of interactions with other people; and other people can enable learning but the final responsibility for learning has to be assumed by the person who is learning.

Ask the following questions to prompt class discussion:

- Was Piaget a social constructivist? Explain your answer.
- What is the teacher's role in a classroom guided by social constructivist learning theory?
- How are questions used in classrooms that are governed by social constructivist learning theory? (Though Student Teachers probably haven't studied this particular question, prompt them to answer by thinking about the issues rather than drawing on knowledge.)

Small-group work (15 minutes)

Repeat the same activity used in the direct instruction group work.

Closing (5 minutes)

Give Student Teachers three minutes to write a paragraph summarizing today's class. The summary should contain the main idea developed today, but they should not be a description of what happened in class. The summary should try to capture the intellectual purpose of the lessons.

The summaries should be left on your desk at the end of the session.

Read them between now and the next class. If you find a few that capture the intellectual content of the lessons, remove the names, copy, and distribute them to all Student Teachers as a model of a good class summary. If you do not find a good one, write one yourself and distribute to Student Teachers as a model. Remind them that they will make a classroom observation before the next class and to go to the school to observe. Review the homework assignments quickly.

Week 2, session 1 homework

Instructions for Student Teachers

Activity 1: Conduct two classroom observations in one school

In one day, observe a lower primary school class and an upper primary school grade class. Make every effort to talk with the teachers you observe before you leave the school and ask them what they think makes a good teacher. Also talk with your two partners about the observations. Come to the next class prepared to present your data on the frequency of each teacher action on the 'Teacher Observation Form'. Add your three totals for each behaviour and divide the combined total by three. Bring your 'Teacher Observation Form' to class along with any notes you made in conversations among yourselves and with the teachers you observed.

Week 2, session 2 lesson

Today in class (5 minutes)

Distribute the model summaries (or summary) from the last class session. Give Student Teachers two minutes to read them. Tell them that they will be asked to write a summary of today's class and the example summary should be used as a model.

Today's class has two purposes: to summarize data from their classroom observations and to give them time to write a personal theory of in their professional journals.

Examining data from classroom observations (20 minutes)

Have charts posted on the wall or board so that they are visible to everyone. There should be two charts: one for the lower primary observations and one for the upper primary observations. Use these charts to tally frequencies of occurrence for each action observed by each group. (Each group will present you with an average of their observations.)

List the teacher actions on the 'Teacher Observation Form' on the left side of each of your charts. Draw horizontal lines between actions to create rows with one action per row. Create as many columns as there are groups of observers. Label one chart 'Lower primary classes' and the other 'Upper primary classes'. Each group will give you the mean for each action for their three sets of scores. Enter each group's numbers for each action for the lower primary classes and the upper primary classes. Study the charts and look for the most and least frequently occurring actions. Look for outliers. Look particularly for classes where the most actions occurred. Theoretically, those should be the most effective teachers. Get the names of those teachers and their schools. If it is convenient, you may want to invite one or two of those teachers to talk with the class. Save the charts, as you will use them again in the next class.

Writing (20 minutes)

Have Student Teachers write their current personal theory of learning in their professional journal.

Pair-share (5 minutes)

In pairs, have Student Teachers discuss their personal theories of learning. They should identify what they believe is their most significant insight and whether the theory they wrote today has been influenced by experience in this course. If so, have them explain how the course experiences have influenced their theory?

Closing (10 minutes)

Tell Student Teachers to read the model summary (or summaries) of the last class session given to them at the beginning of today's class. Give them four minutes to write a one-paragraph summary of this class session. Remind them that they are not supposed to summarize by listing class activities; they are supposed to find the main point or the 'big idea' in the session and then identify how it was developed. Tell Student Teachers to leave their summaries on your desk as they leave the classroom.

Week 2, session 2 homework

Ask Student Teachers to come to class prepared to talk about your personal theory regarding how people learn.

Week 2, session 3 lesson

Today in class (10 minutes)

Return Student Teacher's summaries from the previous class session. If there were any good summaries, delete the names and distribute copies to all Student Teachers as models. Tell them that writing a good summary is both a significant skill and a learning strategy. Summarizing will help them understand and remember what they are learning in this course. Writing summaries of class sessions will become standard practice in the course. Remind them that a good summary will identify the main point or 'big idea' of a class session and relevant supporting details. Tell them to read a model summary. Ask one of the Student Teachers to identify the main point in the summary.

Summarizing observational data (20 minutes)

Return the charts from the last session to the wall so that everyone can see the data. Student Teachers will use this time in class time to get the data from the charts that they need to complete their homework assignment.

For homework, Student Teachers will write two one-page summaries: one of the lower primary school data and one of the upper primary school data. Their summaries should include the most frequently occurring actions and the least frequently occurring actions. They also should include the number of classes in which they saw five or more actions, what those actions were, and the number of classes in which five or fewer actions were observed. If there are differences in actions between teachers in the lower and upper primary classes, this should be noted. If teachers used actions not on the 'Teacher Observation Form', this should also be noted.

The point of this exercise is to develop a snapshot of primary school teachers' actions when they use effective teacher research as a guide to teach.

Small group discussion (10 minutes)

Divide Student Teachers into groups of five. Using Handout 6 'Seven Principles of Learning', ask them to discuss the definition of learning. Ask groups to list which aspects of the principles they agree with, disagree with, or don't understand.

This list will become the basis for a third one-page paper.

Whole-class discussion (15 minutes)

This is the first in a series of discussions on cultural influences on teaching and learning in Pakistan. This topic is a thread that runs through the course. This first discussion is a response to the following questions:

- What do Pakistani parents want education to achieve for their children?
- Do expectations differ from one subculture to another?

Cite some of the subcultures and their differences in expectations.

Closing (5 minutes)

Student Teachers have 5 minutes to write a one-paragraph summary of this class session. Tell them to leave their summaries on your desk as they leave the classroom.

Week 2, session 3 homework

Instructions for Student Teachers

Activity 1: Observational data

Using the data obtained in class today, write two one-page papers presenting a snapshot of teacher actions during lessons in a lower primary and upper primary classroom.

Activity 2: Contemporary definition of learning

Using the list created in class today, write a one-page critique of the definition of learning that was discussed in your small groups.

UNIT



CLASSROOMS ARE
BUSY PLACES

Unit Overview

Teaching is a universal human experience: parents teach their children; brothers and sisters teach each other; friends teach friends; bosses teach employees; and colleagues teach colleagues. These examples of teaching usually involve only one student or a few and occur in the setting where the learning is used. (For example, a child learns to use a cup or a spoon while eating.) Teaching in a classroom is different. First the group of children is large, and each child is different from the others, creating management issues for the teacher. Second, learning takes place in small rooms where movement is restricted, creating motivation and attention problems for children. People who have not been classroom teachers find it difficult to understand that classroom teaching is hard work. The purpose of this unit is to introduce Student Teachers to complexities of classroom life. In the second week, the unit includes some ways that teachers manage a naturally difficult learning environment. (Remember, next semester Student Teachers take a course in classroom management.) The first week of the unit focuses on the teacher's attention to children, which is a scarce commodity that must be shared. The second week's focus is on management techniques.

Learning outcomes

By the end of this unit, Student Teachers will be able to do the following:

- cite reasons classrooms are difficult environments
- understand why teachers need to move around the classroom during lessons
- know how to record an interaction between a teacher and a child
- know how to phrase directions to students in positive terms
- understand the importance of grouping children and the various grouping possibilities in a classroom
- appreciate the value of pairing children for learning.

Week 3: Sources of complexity in the classroom



NOTE TO FACULTY: This unit is intended to convey the message that, in many ways, classrooms are unnatural settings for learning. During the first week of the unit (week 3) Student Teachers are expected to spend two hours observing in classrooms. The first session of the week can be used for familiarizing students with the observation procedures and answering any questions they might have. The second session of the week can be used for reflection on the students' own experience in school and the extent to which the features of classroom life listed below were characteristic of their experiences in school. If Student Teachers report a more positive environment for learning than the list below implies, they can be guided to hypothesize about reasons. Similarly, if their experiences were consistently negative, hypotheses about the reasons are equally important.

The last session of week asks the Student Teachers to talk about and interpret their observations in the classroom. As in Unit 1, they should come to the third class session with a two-page summary and interpretation of their observations and the forms they used during the observations.

Sub-topics

- Managing a crowded space
- Working with groups and individuals
- Managing different activities occurring at the same time
- Diversity among children
- Managing scarce resources
- Coping with unexpected events

Week 3, session 3 lesson

Today in class (5 minutes)

Select a Student Teacher to give a two-minute summary of the previous class. Ask if anyone would like to add to the summary. If you get volunteers, choose no more than two and restrict their comments to one minute each.

Tell the Student Teachers that they are going to note some generalizations about how the teachers they observed distributed their attention among their entire class. This will involve a whole-class discussion based on their classroom observations.

Choosing rules for today's discussion (15 minutes)

Discussions are a useful means for integrating information from several sources. Good discussions don't just happen; the participants have to work to have a good discussion. Let's talk for a few minutes about characteristic of good and bad discussions.

Think for a minute about the best discussion you have ever had. What made the conversation so satisfying? Pause for a minute and then call on six or seven people to say what they think. Choose one student to write what each says on the board or chart paper.

Now think for a minute about the worst discussion you have ever had. What made that conversation so unsatisfactory? (Proceed as with the discussion on good conversations.)

Using the good and bad features of discussion, guide the class to formulate four rules for today's discussion.

Small-group work to prepare for discussion (15 minutes)

Put two triads together to create groups of six. (It is hoped that the triads that observed together discussed their observations before they wrote reflective papers on the observations.) During the time allotted, the triads should compare the findings from their observations, look for common patterns and exceptions, and record them on chart paper and post when the small groups reconvene as a class.

Whole-class discussion of results from observations (20 minutes)

Start this discussion with a sentence-completion exercise. Ask Student Teachers to complete the following sentences in writing:

- During these observations I was most surprised by...
- During these observations I was worried by...

Student Teachers will review the posters from the small-group work and ask any questions they have, including about the 'Teacher Observation Form'. They will look for patterns in the information. For example, teachers in the lower primary classes are more inclined than teachers in the upper primary classes to move around the room so they know what all children are doing. Or, when teachers stay in one place in the room, children are less inclined to be attentive to the teacher.

At this point ask four or five Student Teachers to read their completed sentences. If others want to read their sentences, honour their requests. Ask Student Teachers to talk about the consequences of the teachers they observed paying more attention to high-performing children than to low-performing children. Bring the 'surprised' and 'worried' comments into the discussion if they are relevant.

Closing (5 minutes)

In five minutes or less, have Student Teachers write a summary of today's class. Have them leave their summaries on your desk.



Week 4: Managing complexity

NOTE TO FACULTY: As noted in the introduction to the unit, this course is a story about the work of classroom teachers. As such, it can also be seen as an advance organizer for the teacher education curriculum in which students in the ADE/B. Ed. (Hons) degree programmes are enrolled.

For example, this unit is a narrow window on the knowledge and skills students will acquire in the Classroom Management course that they take next semester. In a limited way, last week's sessions introduced Student Teachers to the fact that children are likely to get more attention from a teacher if they are in a class of 10 children rather than in a class of 40. This week's sessions introduce Student Teachers to two of the many ways that effective teachers organize work in the classroom so children do learn. Because they have already seen how difficult it is for one adult to distribute attention equally among many children, week 4's first session could be devoted to helping Student Teachers appreciate how important it is to know and remember important information about each child in order to show equal interest in each of them. Thinking about creative and effective ways to remember information about each child could be the purpose of the session. The second session of the week is about using clear, positive language when telling children what they are expected to do. It is difficult, especially for children in lower primary classes, to learn how to work in groups. The third session this week could be used to study and practise learning in pairs as a precursor to working in groups.

Sub-topics

- Learn names, interests, and learning strengths fast
- Establish rules and routines
- Grouping children
- Organize books and other materials for easy access
- Create pairs of students to help each other

Week 4, session 1 lesson

Today in class (10 minutes)

Choose a Student Teacher to summarize the previous class in two minutes. Ask if others would like to add to the summary. Choose no more than two Student Teachers and restrict their comments to one minute each.

The purpose of today's class is to practise creating clear and positive statements when giving directions to children. Show Student Teachers what you mean by demonstrating how one might change a negative direction, such as 'Don't slam the door' to a positive direction, such as 'Close the door quietly, please'. Similarly, 'Don't yell out the answer' might be changed to 'Raise your hand if you know the answer and wait until you are called to speak'.

Pair work (15 minutes)

Have Student Teachers choose a partner. Together, they will brainstorm a list of five or six negative statements. They should then convert these to positive statements.

Whole-class work (20 minutes)

Reconvene the class and have each pair write one positive direction on the board or chart paper. After the list of positive directions has been completed, have Student Teachers read them, and ask if anyone has a positive version of a direction that uses better wording than the one posted. If so, that person should write his or her direction next to the one already posted. That Student Teacher must also explain why the second direction is better than the first.

The class will decide which is better and why.

Discussion (10 minutes)

When there is agreement on a list of positive directions, lead a discussion on why positive directions are important. What are the consequences of negative talk for children? What is the teacher trying to achieve by using positive talk with children? Do you think their parents try to avoid negative statements to them? If so, do you think a teacher could influence parents' language?

Closing (5 minutes)

Have Student Teachers write a summary of this class session and leave it on your desk.

UNIT



TEACHER-CENTRED AND
STUDENT-CENTRED METHODS

Unit overview

The distinction in teaching methods – teacher-centred versus student-centred – is a good place to start because these methods are usually seen as opposed to each other, though they can be seen as complementary. Direct instruction is used to help children *acquire* knowledge and action sequences (e.g. learning to write the alphabet). Indirect instruction, which involves inquiry-based, problem-solving, and project-based learning, is used to enable children's *understanding* of the physical, social, and psychological world in which they live. In addition to different goals, the two groups of methods derive from different theories about learning and employ different practices.

Both groups of methods belong in schools, but *acquiring* and *understanding* involve different but related mental processes. Each is a legitimate goal of schooling for all children. The purpose of this unit is to illustrate differences between these methods and the theories of learning from which they evolve. Student Teachers will compare lesson templates and study lesson plans for direct instruction and indirect instruction. They will be asked to determine whether these are oppositional or complementary methods. Student Teachers will also learn how to design teacher-centred and learner-centred lessons. This is an introduction to this classification (Direct/Indirect) of teaching methods.

Learning outcomes

By the end of this unit Student Teachers will be able to:

- name higher-order and lower-order mental processes
- describe the learning theory that influences indirect instruction
- describe the learning theory that influences direct instruction
- explain key concepts of direct instruction and indirect instruction
- identify the instructional features of direct instruction and indirect instruction
- take a position as to whether these are oppositional or complementary methods.



Week 5: Key concepts



Sub-topics

- Distinction between lower- and higher-order learning
- Outcomes from lower-order learning
- Outcomes from higher-order learning
- Instructional activities that enable lower-order learning
- Instructional activities that enable higher-order learning
- Direct instruction: a method to enable lower-order learning
- Indirect instruction: a method to enable higher-order learning
- Different roles for teachers and children

NOTE TO FACULTY: This unit has two goals: (i) to help student teachers see the distinction between lessons influenced by behavioural learning theory (direct instruction) and lessons influenced by cognitive learning theory (indirect instruction) and (ii) to help people learning to teach decide if teachers have to choose one method or the other. The task is first to help Student Teachers understand the difference between lower- and higher-order thinking, a distinction proposed by educational psychologist Benjamin Bloom, when he created a *Taxonomy of Educational Objectives* in the 1950s. Next help Student Teachers understand the differences between direct instruction and indirect instruction. Ask Student Teachers to decide if either theory/method is sufficient for mastering the primary school curriculum in Pakistan. The primary assignment in this unit can be a paper on this topic.

A formal definition of the two levels of thinking is included here to help make the distinction between them clear for the class.

Lower-order thinking occurs when students are asked to recall factual information or to employ rules and algorithms that have been learnt to mastery. Students are given specific knowledge that ranges from facts to complex concepts. The knowledge is conveyed through a text, lecture, worksheet, or other direct instructional activities. The meaning of 'instruction' is to transmit knowledge or guide practice of action sequences known to produce a specific and predictable outcome.

Higher-order thinking requires students to manipulate information and ideas in ways that transform their meaning and implications. This transformation occurs when students combine facts and ideas in order to synthesize, generalize, explain, hypothesize, or arrive at some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems and discover new meanings and understandings. When students engage in the construction of knowledge, an element of uncertainty is introduced into the outcomes from instruction.

Some educators believe that most learning in school, especially by class 4, involves both lower- and higher-order thinking, which fall along a continuum in any given lesson or unit. That is, lessons start with experience that requires lower-order thinking to assure that children have the knowledge they will use to form generalizations and solve problems.

The first session for week 5 is outlined below. The second session can be used to study behavioural and constructivist learning theories and to identify differences between them. These two articles will help you prepare an active lecture on the theories.

G. Graham, 'Behaviorism', in E. N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2010) <<http://plato.stanford.edu/entries/behaviorism/>>, accessed 5 March 2013.

This is a long article that contains more information than is needed for beginners. It is well written, though, and should be easy to abstract.

'Constructivism Learning Theory', Teachnology <<http://www.teach-nology.com/currenttrends/constructivism>>, accessed 5 March 2013.

This is a long article, but it is a good reference that contains links to prominent constructivist theorists (Piaget, Vygotsky, and Bruner) as well as links to text on classroom applications of constructivist theory.

Week 5, session 1 lesson

Today in class (10 minutes)

Choose a Student Teacher at random to summarize the previous class session in two minutes or less. Give two more Student Teachers one minute each to add to the first student's summary. Discuss the importance of summaries at the beginning and end of each class. Make sure the discussion addresses the following points:

- to learn how to summarize
- to keep the story theme of the course (exploring teaching) in our minds
- to review what we have learnt in the course.

Lecture (25 minutes)

This lecture is about behavioural learning theory and, as indicated earlier, can be based on the Graham's 'Behaviorism' (see this week's Notes to faculty). After 10 minutes, pause and ask two or three Student Teachers to summarize the important points about behavioural theory that you have made.

In-class writing (15 minutes)

Have each Student Teacher write a summary of your lecture on behavioural learning and leave it on your desk before leaving the classroom.

Closing (5 minutes)

Call on a Student Teacher to summarize today's class. Ask for two volunteers to add to the summary.

Week 5, session 1 homework

Give each Student Teacher a piece of chart paper. Ask one half of the Student Teachers to draw a picture of a classroom (with the teacher and children present) guided by behavioural learning theory. Ask the other half of the class to draw a picture of a classroom guided by constructivist learning theory. They should put as many indicators of the theory in the picture as they can imagine. Compare the drawings in the next lesson.

**Week 6: Model lessons**

NOTE TO FACULTY: As indicated earlier, the main assignment for this unit can be a paper in which the Student Teachers describe their beliefs about the role of direct and indirect instruction in primary schools in Pakistan. This assignment would be appropriate for the end of week 6, and Student Teachers could have a week to complete it. It might be a good idea to have them write a draft in their journals before they produce the final paper.

Week 6, session 1 is described below. Sessions 2 and 3 can be devoted to studying lesson plans.

Week 6, session 1 lesson**Today in class (5 minutes)**

Rather than ask for a summary today, call on individual Student Teachers and ask each to name either a lower- or higher-order thinking skill. Designate which skill level you want selected Student Teachers to name.

Show and tell: classroom drawings (10 minutes)

In 10 minutes, randomly select as many Student Teachers as you can to discuss their classroom drawing. Make sure that they point out the indicators of behavioural learning theory in the classroom.

Lecture (25 minutes)

Create this lecture based on the 'Constructivism Learning Theory' (see week 5's Notes to faculty). Stop at least three times during the lecture and call on a Student Teacher to summarize the main points about constructivism you have identified.

In-class writing (15 minutes)

This is a summary of your lecture on constructivist learning theory. Student Teachers can leave their papers on your desk as they leave the classroom.

Closing (5 minutes)

Rather than having Student Teachers provide a summary, ask Student Teachers different from those who participated at the beginning of the class to name a lower or higher order thinking skill. Once again, you make the choice for them.

Week 6, session 1 homework

On the other half of the chart paper, Student Teachers will draw a classroom guided by constructivist learning theory. Again, remind them to put as many indicators of the theory in the picture as they can imagine.

UNIT



LECTURE, DEMONSTRATION,
DISCUSSION, QUESTIONS,
COOPERATIVE LEARNING

Unit overview

As the previous unit illustrates, the method or practice that a teacher chooses depends on the goal for a particular group of students.

Teachers have choices not only about teaching methods but also about how they group students for instruction. A teacher's decision about grouping is determined by a lesson's goal or objective. For example, if a lesson involves every child in the class having information that is not easily accessible and requires interpretation, the teacher will probably decide to construct a lecture followed by discussion, including questions, for the whole class.

This unit relies on cooperative learning groups as the process by which a lesson using a particular teaching method (lecture, demonstration, or discussion) will be practised in class, with peers as students.

This unit has ambitious goals and complicated logistics. Each Student Teacher will be assigned to one of six cooperative learning groups. Each group's task is to create a 15-minute lesson using one of the methods in the unit title (lecture, demonstration, or discussion) for a total of six lessons (two for each method). All six lessons will include questions. The teaching method will be assigned to the group, but the group will choose the topic of the lesson. One person from each group will teach the lesson to the rest of the class during the third week of the unit (week 9 of the course). Three class sessions will be devoted to the lessons (two lessons per day), leaving 5 minutes each day for discussions of the lessons and 15 minutes for discussion of questions regarding strategies. The group member who teaches the lesson will be randomly selected on the day of the lesson; names will be drawn at random from an envelope containing everyone in the group's name.

Learning outcomes

By the end of this unit, Student Teachers will be able to do the following:

- describe the purpose of cooperative learning groups and the plan they followed to achieve a learning goal by cooperative work
- identify when to use a lecture, demonstration, or discussion to achieve a learning goal and describe the essential features of an effective lecture, demonstration, and discussion
- differentiate a lesson where the teaching method is recitation from a lesson where the teaching method is discussion, and produce illustrative questions for recitation and for discussion
- have a written record of a lesson they produced in a cooperative learning group that was either a lecture, demonstration, or discussion and that includes a peer critique of the lesson.

Handouts

Handout 7 'Recitation and Discussion Require Different Questions'

Week 7: Cooperative learning



Sub-topics

- Peer teaching practice
- Rationale for cooperative learning
- Different models of cooperative learning
- Cooperative learning procedures
- Incentive structure of cooperative learning
- Limitations of cooperative learning
- Checklists as assessment devices

NOTE TO FACULTY: The use of peer teaching as a form of teaching practice has become more common recently in teacher education programmes around the world. This unit is an example of that practice. The methods of instruction to be practised are ancient, dating back to early Greek philosophers. Modern interpretations of the methods (e.g. active participation by students during a lecture) reflect contemporary learning theories that acknowledge learning as the student's responsibility. This unit was structured to reflect another tenet of contemporary learning theories: the opportunity to learn can be enhanced by two or more students learning together. Week 7, session 1 is described below. Its purpose is to explain the peer teaching process in detail and introduce cooperative learning as a group experience.

Week 7, session 2 can be used to study cooperative learning; the most efficient way to cover this topic is with a lecture. The following website, designed for university faculty who teach geosciences, can inform your lecture: <http://serc.carleton.edu/introgeo/cooperative/index.html>. Explore the links to find everything you need to know about cooperative learning. (If this URL does not work, try typing 'cooperative learning' into a search engine to find similar pages.)

Week 7, session 3 can be used to model how to create a checklist, as this will be needed during week 9's peer teaching practice. Ask two Student Teachers to summarize for the class the essential features of cooperative learning based on the lecture about the topic. All Student Teachers should take notes on each summary. Organize Student Teachers in small groups (three or four Student Teachers per group) and have each group use their notes from the summaries to create a checklist for assessing individual and group performance during a cooperative learning activity. Have each group post their checklist on the wall or board, and as a whole class, create one list from the group lists.

Week 7, session 1 lesson

Today in class (10 minutes)

Ask a Student Teacher to give the name of the previous unit. (This person may look at the syllabus for the answer.) State that the next Student Teacher will be asked to state the purpose of the unit. Give the class a moment to reflect and then choose a Student Teacher to respond. (Answer: The purpose of the unit was to learn the distinctive features of direct and indirect instruction and to take a position on the role that these methods of instruction have in primary school classrooms in Pakistan.) Ask if anyone wants to add to the response.

State that the next Student Teacher will be asked to state the main point of the last class session in Unit 3. Give Student Teachers a moment to reflect and then choose someone to respond. (Answer: Effective teachers understand and have practised several methods of teaching. They choose from one method or a combination of methods that they believe is most likely to be successful for the lesson's purpose and students characteristics.) Ask if anyone wants to add to the chosen class member's response.

Preparation for small-group work (5 minutes)

Remind Student Teachers that direct and indirect instruction are comprehensive methods that are influenced by particular theories of learning and by the belief that mental processes can be classified as lower- or higher-order thinking skills. In this unit, you will cover teaching methods that can be classified as teaching strategies. Two of the strategies (lecture and demonstration) are means for transmitting declarative and procedural knowledge to children and one (discussion) is a means for developing understanding.

Ask for an explanation of the distinction between declarative and procedural knowledge. (The class will first encounter this distinction in Unit 6 so help them if they find the task difficult.) Assign Student Teachers to groups and ask them to think about their experience in school. Student Teachers should try to recall an interesting and effective lecture, a demonstration that produced the desired results, and a discussion in which their knowledge and/or attitudes changed.

Small-group work (15 minutes)

As Student Teachers discuss their experiences with lecture, demonstration, and discussion strategies, they should list the features they think made these particular experiences useful and memorable on chart paper.

Reports from small groups (10 minutes)

Have each group post their chart on the wall or board. The class should spend 10 minutes reviewing each other's chart, in particular looking for similarities. If possible, leave the charts on the wall; at the end of week 8, Student Teachers can then compare what they have learnt during the week with their thoughts and beliefs prior to studying these three strategies.

Learning about the unit project/assignment (15 minutes)

Assign the Student Teachers to one of six groups in which they will work for the remaining sessions in this unit. Put six pieces of paper in an envelope; two each should be labelled 'discussion', 'lecture', and 'demonstration'. Have one person from each group draw the group's assignment (lecture, demonstration, or discussion) from the envelope. Explain that each group is responsible for the content of the lesson and any instructional activity that the group thinks will enhance the lesson. They will have the remainder of week 7 and all of week 8 to create the lessons, which should include questions.

Be sure that Student Teachers understand that they are collectively responsible for the lesson, only one of them will teach it – and that person will be chosen on the day of the lesson. The next class session will be devoted to the study of cooperative learning, and group responsibility and individual responsibility within a group will be discussed.

Finally, explain how this activity will be graded. Student Teachers will be graded by their peers using a checklist, and each group will be responsible for creating a checklist for their group's work. (They will practise creating checklists in the session 3 of this week.) All lessons can be taught during week 9.

The class will probably have questions. Consider explaining that peer teaching practice is becoming increasingly popular in teacher education programmes. It lends itself to reflective discussion because the 'peer students' are also learning to think like teachers.

Closing (5 minutes)

Ask one Student Teacher to summarize today's session. Ask three Student Teachers to identify the most important fact, procedure, or concept learnt today.

Week 7, session 1 homework

Each group should have a meeting before the next class to select a topic for their lesson and discussing getting the resources needed to teach the lesson.

Week 8: Lecture, demonstration, and discussion



Sub-topics

- Reasons to lecture
- Structure of a lecture
- Active lectures
- Structure of a demonstration
- Characteristics of good discussion
- Purposes of questions
- Questions in lectures, demonstrations, and discussions
- Wait time

NOTE TO FACULTY: The purpose of this week's sessions is to study characteristics of effective lectures, demonstrations, and discussions used in primary school classrooms and to give the class the opportunity to develop the lessons that they will teach next week. The preparation for next week's lesson will involve both in-class work and homework. As the Instructor, you can decide where the work will be done or you might make that decision in conjunction with your class. Every time groups work on their lesson, they should complete (and date) a copy of the 'Teacher Observation Form' to help their peers develop their teaching skills. They should submit these critiques along with the assessment checklists.

Week 8, session 1 can be used to study the characteristics of effective lectures, demonstrations, and discussions. This work can be done in the small groups assigned to each teaching strategy, but then pair the groups so that they can create a common list of characteristics of the effective teaching strategy. The paired groups can present their list of effective characteristics to the class and each group's list can be compared with the lists constructed prior to formal study in session 1 of week 7. The homework assignment for session 1 is to read Handout 7 'Recitation and Discussion Require Different Questions' and bring it to the next class.

Week 8, session 2 is developed below. Handout 7 'Recitation and Discussion Require Different Questions' provides the content for this session: the distinction between a lesson that is a recitation and a lesson that is a discussion. This distinction is important because recitations require lower-order thinking skills and discussions require higher-order thinking skills, and therefore, the two strategies produce different learning outcomes for children. In primary classrooms, recitations are more common than discussions. If a society wants its teachers to teach higher-order thinking skills, it is important for teachers to understand the difference between recitation and discussion and to know how to facilitate meaningful discussions in the classroom. Having identified characteristics of effective lectures, demonstrations, and discussions, the class will be ready to develop assessment checklists for their lessons in week 8, session 3.

Week 8, session 2 lesson

Today in class (5 minutes)

Select a Student Teacher at random to review the characteristics of effective discussions. (Make sure the charts listing these characteristics are not in view.) Ask the class whether any characteristics are missing from their colleague's review and, if so, which ones. Once any differences of opinion have been resolved, tell the class that today's session will focus on differences between a recitation lesson and a discussion lesson.

Small-group work: questions in recitation lessons (15 minutes)

Using Handout 7 'Recitation and Discussion Require Different Questions', the groups should discuss and agree on the purpose of recitation lessons and then identify the characteristics of questions asked in recitation lessons. For example, a teacher asks a question and one student answers it – like a fast-paced quiz show with only one correct (brief) answer. Have Student Teachers review the fourth grade classroom dialogue (recitation lessons) about *Androcles and the Lion* and *The Cay*. They should discuss

whether the questions in both dialogues are alike or different and then explain their reasoning. (Though the questions ask children to recall facts, they are different. In the *Androcles* recitation, questions are ‘what’ questions; in *The Cay* recitation, the questions are ‘why’ questions.)

In-class writing (10 minutes)

Working independently, each Student Teacher should answer to the question about the *Androcles* and *The Cay* recitations in writing. They should submit their piece at the end of the writing period.

Small-group work: different purposes of recitation and discussion (10 minutes)

In small-group discussions, Student Teachers will focus on the different purposes of recitation and discussion. (You may give students the following hint to guide their discussions: recitations are called quiz shows; discussions are called conversations.)

In-class writing (15 minutes)

Ask Student Teachers, working on their own, to note down differences in questions asked during discussions and recitations. Give them 10 minutes to write, and then invite a few Student Teachers to share their ideas.

End this activity by explaining that a discussion is a mix of questions and statements, usually in response to a significant question. Children are the dominant speakers in a discussion and ask each other questions rather than letting the teacher ask all of the questions. Answers to questions are longer, and the pace of a discussion is slower than for a recitation. Also, questions are open (more than one possible answer) rather than closed, as in a recitation.

Closing (5 minutes)

Call on three or four Student Teachers and ask each to tell the most important thing they learnt from this class session. Ask them to leave their second papers on your desk as they leave the classroom.



Week 9: Asking questions

Sub-topics

- Open and closed questions
- Lessons taught in class

NOTE TO FACULTY: This is the week that Student Teachers teach their lessons to each other. Remember that the person responsible for teaching the lesson will be chosen by a drawing just before the lesson. Remind the class that everyone in the group will get the same grade. If the groups have prepared assessment checklists, have someone from the group presenting the lesson distribute the checklist before the lesson begins. Both examples of the same teaching strategy can be given on the same day. Each lesson should last 15 minutes, so there should be ample time following the lesson for the 'peer students' (i.e. the rest of the class) to complete the checklist and return it to the group that taught the lesson.

As homework, each group should compile the results from their assessment checklists and write a one-page critique of their lesson based on the checklists and their own assessment of the lesson outcomes. This can be submitted at the beginning of the next class session.

UNIT



TEACHER-STUDENT AND
STUDENT-TEACHER
INTERACTIONS THAT SUPPORT
LEARNING IN THE CLASSROOM

Unit overview

This unit expands on the topics studied in Unit 2, when the idea that typical classrooms are not natural environments for learning was introduced. Student Teachers have had the opportunity to watch teachers and children at work in two different classrooms and discuss their observations with the teachers and their colleagues. This unit is a companion to Unit 2 and focuses on social interactions in the classroom, which differ from social interactions away from school. There are very few situations where one adult is supposed to *simultaneously* interact with approximately 40 children and give each child the same attention and interest.

Unit 2 introduced to a few strategies that teachers use, such as grouping, to make it possible to work efficiently in a classroom. In this unit, the possibility that a teacher and children can turn an unusual and potentially difficult social environment into a comfortable, non-threatening social environment will be examined.

In the last unit, the focus was on cooperative learning, a group learning process in which Student Teachers participate. Although most of the social skills are the same, there is a distinction between collaboration in the classroom and cooperative learning groups. Cooperative learning groups use collaboration to achieve particular academic goals. Collaboration is a social process that supports learning in the classroom in several ways and ideally continuously

Student Teachers will observe in two more classrooms during the next two weeks. In each classroom, observations will examine teacher interactions with all children in the class and then two children, chosen by the teacher, interacting (or not interacting) with each other. Student Teachers should pay particular attention to the teachers to see if they interact with several children and if they interact with each in a similar way. When Student Teachers watch children's interactions with each other, they should look for signs of cooperation and collaboration. They should make anecdotal records of these observations.

Learning outcomes

By the end of this unit, Student Teachers will be able to do the following:

- differentiate children's collaboration in the classroom from working in cooperative learning groups
- provide examples of teacher's and children's actions that illustrate respect and trust
- compare the social realities of observed classrooms with idealized accounts of social interactions in the class readings
- present recommendations for actions a teacher could take to improve social interactions in classrooms where those interactions are not conducive to learning
- differentiate teacher-child social relationships in the classroom from relationships that children have with other adults in their lives, especially parents.

Week 10: Constructive interactions between teacher and student



Sub-topics

- Respect
- Credibility
- Fairness (justice)
- Trust
- Interest
- Enthusiasm
- Adaptive teaching

NOTE TO FACULTY: This unit is based on the assumption that social relationships in the classroom are successful when a teacher is able to convince children that though he or she is in charge of the work in the classroom, is interested in them, and wants to work cooperatively. Also, social relationships in the classroom are successful when children are willing and able to work in collaboration with each other rather than by themselves or in competition with each other.

The unit is organized so that discussions of these assumptions can be informed by readings on the subject of social relations in classrooms and observations of social relations in classrooms. If possible classroom observations should occur by the middle of the first week so that what Student Teachers see and record in the classroom can be part of the discussion. Week 10, session 1 can be used to arrange a site and time for classroom observations and to learn how to conduct the observation. This session can also be used to learn about anecdotal records as an observation tool. Homework for this session can include making an anecdotal record of something that occurs at home. If family members are amenable and can act naturally, students might postpone their own meal, assume the role of an observer, and make an anecdotal record of the family's actions and conversation at the dinner table.

During session 2 of week 10, Student Teachers can prepare for their observations by discussing and deciding upon behaviours that indicate respect for another person. This can be done first in small groups and then through a whole-class discussion. The same can be done for behaviours indicating trust and showing interest in another person. It is important to agree on behaviour indicators for these concepts so that a discussion about them based on classroom observations is valid. Week 10, session 3 is described below.

Week 10, session 3 lesson

Today in class (5 minutes)

This unit has more information, ideas, and recommendations for Student Teachers than can be covered in two weeks. Organize Student Teachers in their observation triads. One Student Teacher from each of the triads will answer the survey questions about what they observed in the classrooms (discussed below).

Survey of observational data on teacher's distribution of attention during a lesson (25 minutes)

Present the class with information about the survey they will take. It will cover teacher interactions with children during the observed whole-class lesson, which should have lasted 30 minutes.

Ask the class series of questions about their observation. The representative from each triad should raise his or her hand, as appropriate, in response to each question. (Record the numbers of hands in the air for each question.) The questions should focus on how the teachers distributed attention among students during the lessons. Questions might include:

- Which of you have data indicating that at least one of the teachers you observed interacted with at least half the class during the lesson?
- Which of you have data that at least one teacher interacted with fewer than one-fourth of the class during the lesson?
- Which of you have data indicating that at least one teacher interacted with one child five or more times during a lesson?
- Which of you feel that at least one teacher was trying to distribute attention equally among children?
- Which of you feel that both teachers you observed were trying to distribute attention equally among children?

Note the number of hands raised in response to each question. Ask Student Teachers what conclusions can be drawn from the data presented.

Interpretation of the data on teachers' distribution of attention during a lesson (10 minutes)

If Student Teachers found that most teachers they observed made a genuine effort to interact with at least half their children, ask them to speculate how they learnt to interact in that way. If Student Teachers found that most teachers they observed interacted with less than one-fourth of their children, ask them to speculate on obstacles that may have prevented them from paying attention to a larger percentage of the class.

In-class writing (15 minutes)

Ask Student Teachers to write about the experience they had observing teachers interacting with children during a whole-class lesson. They should address whether their observations will influence the way they interact with children during practice teaching and, later, when they have their own class. If so, what will the influence be? How will they make sure they remember this experience when as a teacher?

Closing (5 minutes)

Ask three or four Student Teachers to identify the most important thing learnt this week.

Week 10, session 3 homework

Have Student Teachers write a report of the classroom observation conducted this week. They should submit it at the beginning of the next class session, with their observation data.

Week 11: Constructive interactions between students



Sub-topics

- Cooperative working relationships are central
- Examples of cooperative working relationships
- Feelings are the foundation of thought
- Importance of trust and confidence

NOTE TO FACULTY: The take-away message from this week's sessions is that children, including those in class 1, can learn to work together and can be helpful to and supportive of each other to the mutual benefit of everyone, including the teacher. Children being able to work in small groups or pairs while helping each other is the key to a comfortable social environment in the classroom. As indicated earlier, this unit is based on the belief that cooperative learning groups and student collaboration (working together) are not identical processes, although they share many of the same goals and social skills. Cooperative learning groups are organized to achieve a particular academic goal. Collaboration is a continuous process intended to produce both joint actions (e.g. shared reading) and mutual support for individual actions.

The challenge for this week's lesson is helping Student Teachers identify behaviours and attitudes that collaboration requires. In week 11, session 1, Student Teachers observe each other. Create groups of six and have one person act as the observer. The observer will watch the rest of the group talking about the behaviour and attitudes that collaboration requires. If you choose to do this, make sure that each observer keeps a written record of the skills and attitudes they observe. Ask observers to compile a report back to the whole class.

Week 11, session 2 can be used to review and consider the behaviours and attitudes identified through small-group work in the previous class session and to consolidate the groups' work. Pair students together, ask four or five challenging questions, and have them practise working together using *Think, Pair, Share*. Think, pair, share is a relatively quick process: the teacher poses a question, individual students think about an answer, students pair up to share and improve their answers, and then they share their answer with everyone else. This method provides learners with an opportunity to test and improve an answer with a co-learner.

Student Teachers can also identify and create questions from an article or reading for homework. Pairs of Student Teachers should read the article and then create a set of questions based on it. In the next class, pairs can exchange articles and questions with each other. Student Teachers should then reflect on the collaborative nature of the activity.

Week 11, session 3 lesson

Today in class (5 minutes)

Collaboration means working together successfully. Studying collaboration is important because evidence indicates that classrooms where students take responsibility for teaching and supporting each other (with guidance from their teacher) are comfortable, pleasant places to work. There is also evidence that students in classrooms where collaboration is the norm achieve better test scores than those in non-collaborative classrooms.

Collaboration requires some skills and attitudes that have to be learnt. This week's aim is to identify the skills and attitudes that successful collaboration in the classroom requires.

Review of the skills thus far identified (10 minutes)

Ask Student Teachers to recall from memory the consolidated list of skills and attitudes they believe collaboration requires and post them again on the wall or board. The list may include the following:

- attentive listening
- taking turns
- being patient
- asking for help if you need it
- showing appreciation for others' work
- knowing how to apologize
- doing your part
- knowing how to compromise
- speaking so that others can understand you
- trying to understand the feelings of others
- keeping your attention on the work.

Keep the list in full view while Student Teachers report on their observations.

Examining the observation data (15 minutes)

Working from the data that Student Teachers brought back from the classroom observations, ask the class the following questions and invite Student Teachers to raise their hands in response:

- Which of you saw 20 or more interactions between the child designated by the teacher as popular and other children during the 30 minutes you observed?
- In what context did these interactions occur (e.g. playground, lunch room, classroom)? (Select three Student Teachers who raised their hand to address this question.)
- Were these interactions positive/negative/ mixed? (Ask separately so that there is no confusion when Student Teachers raise their hands.)
- Which of you saw any interactions between the child designated by the teacher as isolated and other children? (As a follow-up, ask those who raised their hands about the number of interactions they saw, the context in which they occurred, and whether those interactions were positive, negative, or mixed.)

Ask one Student Teacher from each of the triads to characterize briefly the social interactions of children in the class in which they observed. They should address the following questions:

- Did children interact with each other a lot? Were the interactions mostly positive?
- Did you see any actual acts of collaboration (e.g. playing on the playground)?
- Did you see any skills in the interactions between children that are necessary for collaboration?

Reflecting on your own experience with collaboration (10 minutes)

Working with their observation partners, ask Student Teachers to think about their own experience with collaboration (using among other experiences, the *Think Pair Share* experience during the previous class session the experience with cooperative learning in Unit 4) for the purpose of identifying the skills and attitudes they think are important to collaboration.

In-class writing (15 minutes)

This writing assignment combines the interpretive paper about observations and the observation data with a one-page paper about Student Teachers' reactions to the concept of student collaboration in the classroom. Their papers should address the following questions:

- Are you persuaded that you can teach children to collaborate as the main way to interact in the classroom and that the benefits will be a calm, comfortable environment that will improve all children's school achievement?
- Do you think you might want to create a collaborative learning environment when you become a teacher?
- Do you have any reservations?

Closing (5 minutes)

Ask four Student Teachers, chosen at random, if they believe that a collaborative classroom environment is possible and desirable.

Week 11, session 3 homework

Have Student Teachers finish the paper that they started in class. It should be submitted within the next week.

UNIT



DESIGNING INSTRUCTIONS:
GOALS AND OBJECTIVES,
ASSESSMENTS, PLANS,
AND MATERIALS

Unit overview

Teachers started using learning objectives (also called learning outcomes) about 50 years ago. Previously, lessons were named by a topic (for example, addition of two-digit signed numbers) rather than a learning objective (all students will correctly solve at least 8 of 10 problems involving the addition of two-digit signed numbers).

Teachers have more than one way to write learning objectives. Probably, the most comprehensive approach to constructing learning objectives is found in an instructional design process called understanding by design, or backward design. This is a three-stage process that involves (1) the teacher writing learning objectives (knowledge, skills, and understanding), (2) the teacher selecting procedures that will be used to obtain evidence that the objectives have been attained (assessment), and (3) the teacher writing an instructional plan. This process is assumed to be backwards from the way teachers normally design instruction.

In theory, objectives and assessments are written first, but teachers actually move back and forth between objectives, assessments, and a teaching plan as they design lessons. Understanding by design, or backward design, is not illustrated in this course because the back-and-forth nature of the design process is confusing. When Student Teachers have had more experience with basic lesson planning, it will be easier for them to understand and evaluate a lesson (or lesson plan) based on backward design.

This course has covered two different formats for lesson plans that derive from different theories about learning and instruction formats (direct instruction and indirect instruction). Although there are different lesson plan formats, all lesson plans have objectives, a plan for attaining those objectives (including the resources needed to teach the lesson), and the means for collecting evidence that students achieved the learning objectives. This unit includes supported practice for writing learning objectives, creating assessments, and writing a teaching plan.

Student Teachers will develop a lesson plan with their classroom observation triads. Some work will be in class and some will be done as homework.

During week 15, the last week of the unit, Student Teachers will review what they have learnt about methods of learning and instructional principles in the course and compare that knowledge with their personal theories of teaching and learning held at the beginning of the course.

Learning outcomes

By the end of this unit, Student Teachers will be able to do the following:

- write learning goals for both knowledge and understanding that can be confirmed through assessment
- differentiate formative assessment from summative assessment and give two examples of formative assessment
- describe how to create one example of low- or no-cost instructional material.
- be able to create a lesson plan that includes learning objectives, assessments, and a teaching sequence
- identify major changes in personal theories of teaching and learning that occurred during this course.

Handouts

- Handout 8 'Learning Goals vs. Activities and Assignments'
- Handout 9 'The Concept of Formative Assessment'



Week 12: Sources of knowledge for designing lessons

Sub-topics

- Learning principles
- Pakistan's primary school curriculum
- Definitions of standards, goals, and objectives
- Examples of standards, goals, and objectives
- Bloom's Taxonomy of Educational Goals and Objectives

NOTE TO FACULTY: The purpose of this unit is to give Student Teachers the opportunity to practise creating a lesson plan. At this stage, the plans they write will be underdeveloped and imperfect. This is to be expected. Good planning takes practice and Student Teachers are just beginning that process.

Week 12, session 1 has two purposes: to introduce Student Teachers to the national curriculum and to Bloom's Taxonomy. First, the introduction to the National Curriculum (2006) and to Pakistan's Learning Standards for Primary School Students will help Student Teachers understand the origins of required topics for which they must plan lessons. Second, the introduction to Bloom's *Taxonomy of Educational Goals and Objectives* will help Student Teachers learn how to write learning goals/objectives. Student Teachers may write a lesson plan on a topic of their choice from the broad topic 'nutrition' in the class 4 General Science Curriculum. Approximately 25 minutes in class can be allocated to introducing Bloom's Taxonomy. The discussion should emphasize the difference between lower-order thinking skills (knowledge, comprehension, and application) and higher-order thinking skills (analysis, evaluation, and synthesis). Remind Student Teachers that they are supposed to write objectives that require both lower- and higher-order thinking skills.

Try to obtain a copy of the General Science Curriculum, and using either transparencies and an overhead projector or a PowerPoint presentation, show the class 4 General Science Curriculum focusing on nutrition. Do the same for the Learning Standards for primary school children.

Week 12, session 2 is described below.

Study the lesson plan formats and sample lesson plans from Unit 3 during week 12, session 3. Focus on the activities and materials that are the roadmap between objectives and assessment. Notice whether a lesson has objectives and an evaluation plan. For those that do, critique these elements of the plan.

Week 12, session 2 lesson

Today in class (5 minutes)

Choose someone to give an oral summary about creating objectives, as covered in the last class session. Ask for additional contributions, but do not allow more than two Student Teachers to answer. Tell the class that they will be writing objectives for their lesson plans today.

Practise distinguishing between goals and activities/assignments (15 minutes)

Using transparencies and an overhead projector, complete the first three examples in Handout 8 'Learning Goals vs. Activities and Assignments' as a class. Ask Student Teachers to explain their responses. Have the class work in groups of four to complete the remaining examples. After they finish, review the answers as a class.

Practise turning topic statements into learning goals (15 minutes)

Explain the importance of being able to distinguish between topic statements and learning goals. Share a few examples of topic statements and how they are different from learning goals. For example:

- Student Teachers will be able to write learning goals for both knowledge and understanding that can be confirmed through assessment. (a learning goal)
- Learning goals about knowledge and understanding (a topic statement)

Ask Student Teachers how these are different and which is the learning goal and why?

Invite the Student Teachers to work in pairs to create other examples. Move around the class to help them and discuss the examples they create.

Writing learning goals for lesson plans (15 minutes)

Have Student Teachers organize themselves in triads to work on developing lesson plan. (They must choose a topic within nutrition for their lesson.) As a group, they will write two objectives (goals) that require lower-order thinking skills and two that require higher-order thinking skills for their lesson.

Feedback on learning goals (10 minutes)

Call on two triads at random to read their learning goals. Ask for feedback from the class. If the peer feedback is incorrect, amend comments so that Student Teachers stay on the right track. Have the triads to put their goal statements on your desk as they leave.

Return the goals statements at the beginning of the next class session so that Student Teachers can see areas that need improvement.



Week 13: Assessment

Sub-topics

- Definition of assessment in schools
- Personal experience of assessment
- Assessment practices in schools in Pakistan
- Purposes of assessment
- Distinction between formative and summative assessment
- Examples of formative assessment

NOTE TO FACULTY: It is helpful to remember that students will take a full course on classroom assessment in the fourth semester of the ADE/B. Ed. (Hons) degree programme. The purpose of the assessment component in this course is to introduce them to assessment practices in schools in Pakistan and particularly to the distinction between formative and summative assessment. Week 13, session 1 may include a practical definition of assessment as it is used by teachers in their classrooms, reports from university students of their experiences, positive and negative, with assessments conducted in schools, and a survey of assessment practices in schools in Pakistan.

Week 13, session 2 may focus on the distinction between formative and summative assessments, with particular emphasis on the different purposes of the two forms. Understanding this difference is important for teachers, but it is not particularly easy to impart because most Student Teachers have only experienced summative assessments. It is worthwhile to spend an entire class session on this topic. It will be useful to distinguish between the two types of assessment, with summative assessment being an assessment *of* learning and formative assessment being an assessment *for* learning. Guide Student Teachers through examples to understand the meaning of this distinction.

Ask Student Teachers to read Handout 9 'The Concept of Formative Assessment' in preparation for session 3. This handout contains information about different formative procedures, which they will create for their lesson plans. Week 13, session 3 is described below.

Week 13, session 3 lesson

Today in class (5 minutes)

Remind Student Teachers that they are going to create assessment procedures for their lesson plans today. Ask for a volunteer to state, in no more than three sentences, the difference between summative and formative assessment.

Group discussion: formative assessment procedures (20 minutes)

Lead Student Teachers in a discussion on different types of formative assessment procedures.

Triads work to create assessment procedures for lesson plans (20 minutes)

Based on information from the reading and classroom discussion, the lesson plan triads from last week should review the feedback about their learning goals and make modifications as indicated. When they are satisfied with the way the learning goals are formulated, they can turn their attention to assessment and decide on an assessment procedure for each learning goal. They should consider the full range of possibilities, from quizzes to performance measures.

Feedback on assessment choices (10 minutes)

Select two triads at random and ask a member from each to read their lesson's four learning goals and the related assessment procedures. Invite peer feedback, though amend it as necessary. Tell the class to put their learning goals and related assessment procedures on your desk as they leave.

Review each triad's work and provide feedback. Return the work at the beginning of the next class session.



Week 14: Instructional materials

Sub-topics

- Sources of instructional materials, including textbooks, in Pakistan
- School budgets for instructional materials
- Low- and no-cost materials to supplement or substitute for materials provided by the government
- Examples of materials created from local resources by teachers for mathematics, science, and literacy

NOTE TO FACULTY: Week 14, session 1 can be devoted to an examination of textbooks. It will be helpful if Student Teachers have copies of class 4 general science textbooks to prepare their lesson plans. It will be helpful for them to learn how textbooks are created and distributed in Pakistan. They should also know how textbooks are coordinated with the curriculum.



Week 15: Review and synthesis

Sub-topics

- Review of teaching methods and instructional and learning principles
- Review of Student Teacher's current personal theories of teaching and learning
- Search for synthesis
- Complete instructional design project (lesson plan)
- Presentation of lesson plans designed by Student Teachers

UNIT



SELF-REGULATED LEARNING

Unit overview

Learning is not confined to school. Children learn to walk and talk before they go to school. People continue to learn after they leave school and when they go to work. People learn throughout their lives. When you think about your experiences in school, you will probably also conclude that, as you progressed, the work got harder and you spent more time studying. (Learning in school can also be called studying.) The fact that learning is continuous in people's lives is largely responsible for the claim that children should 'learn how to learn' in school.

The purpose of this unit is to introduce Student Teachers to the process of learning how to learn. During this discussion, Student Teachers will probably become more aware of the mental actions that they normally do automatically (without thinking). For example, many likely pause as they are reading and preparing for an exam to ensure that they understand what they are reviewing. As the unit progresses, encourage Student Teachers to think of themselves as both a student (which they are) and as a teacher (which they are becoming). The term *self-regulated learning* describes what is happening when students become their own teachers. To say this another way, self-regulated learning describes what is going on in the mind of someone who is simultaneously a student and a teacher.

Learning outcomes

At the end of this unit, Student Teachers will be able to do the following:

- explain the differences between intrinsic and extrinsic motivation and between mastery learning goals and performance learning goals
- identify their personal motivational style
- explain the interdependence between learning and motivation
- identify six actions that characterize self-regulated learning.

Unit resources

E. Vockell, 'Self-Regulation of Learning', *Educational Psychology: A Practical Approach*, <http://education.purduecal.edu/Vockell/EdPsyBook/Edpsy7/edpsy7_self.htm>, accessed on 5 March 2013.

The National Research Center on the Gifted and Talented, 'Defining Self-Regulated Learning', *Self-Regulation* <<http://www.gifted.uconn.edu/siegle/SelfRegulation/section2.html>>, accessed on 5 March 2013.



Week 16: Self-regulated learning



Sub-topics

- Becoming your own teacher
- Parents and teachers attitudes towards self-regulated learning
- Interdependence between learning and motivation
- Intrinsic and extrinsic motivation
- Mastery learning goals and performance learning goals

NOTE TO FACULTY: Learning is covert – without the help of medical technology, we do not have a window on what is going on in the brain. As such, it has been difficult, if not impossible, to develop a meaningful definition or description of learning. We judge that learning has occurred by observing that a person has new knowledge, new skills, and/or different attitudes. Because learning cannot be directly observed and must be inferred from observable change, contemporary statements about learning describe it as change that is a gain (rather than as a loss). A person can do something or know something today that that person did not know or could not do yesterday.

As theorists began to think of learning as change, they noted that learning is a human activity that one person cannot do for another. A teacher can create favourable conditions for learning, but the learner learning has to enact the mental processes that make learning happen. If learning is a self-determined process, theorists reasoned, why not teach children how to do it when they start to school? This, briefly and somewhat primitively, is the reasoning behind psychologists and teachers interest in self-regulated learning. In one fashion or another, all learning is self-regulated, so let's make self-regulated learning deliberate and systematic. This unit is an introduction to self-regulated learning. You will encounter the concept and teaching practices related to the concept in other courses in your degree programmes. Week 16, session 1 is described below.

Week 16, session 2 can be used to strengthen Student Teacher's understanding of motivation. While most of them undoubtedly know the difference between intrinsic and extrinsic motivation, the parallel concepts of mastery learning goals and performance learning goals will probably be new for them. You may want to distinguish between motivation, the desire to achieve a particular outcome or goal, and volition (i.e. the determination to achieve a particular outcome or goal).

Week 16, session 3 can be used to study the 'how' of self-regulated learning. What do Student Teachers need to learn to become their own teachers? The two Internet resources listed above are invaluable. If there is adequate access to the Internet, you may want to assign reading at least one of those sites as homework before this session.

Week 16, session 1 lesson

Today in class (10 minutes)

The previous class session was a review and summary of the course. Having experienced that review, ask five Student Teachers at random to identify the one idea they encountered in this course that they believe will be the most helpful to them in the classroom.

Independent activity (10 minutes)

The purpose of this unit is to study, talk, and think about self-regulated learning. Give individual Student Teachers 10 minutes to think and make notes about what they do when they are learning/studying. Their notes should address the following questions and the related actions they take:

- What is your mind doing when you are reading an assignment from a textbook?
- What do you do when you are listening to a lecture?
- How do you prepare to write a paper?
- When you are reading, are you aware when you do not understand something? If so, what do you do?

Small-group discussion (10 minutes)

Ask Student Teachers to share their individual responses with each other.

Group reports to the class (10 minutes)

Have one person from each group summarize and share the strategies suggested by the rest of the group members. Listen in particular for reports on setting goals for study sessions and evaluating if their goals have been achieved. Listen also for examples of how Student Teachers monitor the success of their self-study strategies and what they are doing if they are not working.

Guided discussion of the interdependence of learning and motivation (10 minutes)

Ask for a definition of motivation. Scaffold it, if necessary, and do not be too concerned about precision. Work with the class to refine the definition in the next session.

Ask how motivation and learning are related. The ideal answer is that they are interdependent processes and cannot be fully understood apart from each other. If necessary, guide the class towards this answer. Motivation leads to effort, which leads to learning and success, and learning leads to increased interest and increased motivation. Continue with this idea in the next session on motivation.

Closing (1 minute)

Demonstrate some motivational appreciation. For example, thank the class for their interest in today's topic. You might choose to say something like, 'I have learnt a lot from your ideas. I hope you will continue to learn more about how teachers motivate children, and I look forward to working with in the next session'.

Faculty Resources

HANDOUTS

Handout 1, Unit 1

Summary of Conclusions from Teacher Effectiveness Research



In the early 1970s, educational researchers interested in improving teachers' performance and students' learning in school began studying the relationship between teachers' actions in the classroom and students' test scores. As a result, these researchers identified certain teacher actions that have a positive effect on test scores. This research is called 'teacher effectiveness research'.

More recently, researchers have identified teachers' actions that not only result in satisfactory test scores but also have a positive effect on school attendance, promotion to the next grade on time, on-time graduation, cooperative behaviour in school, and students' beliefs that they can learn in school.

While teacher effectiveness research does not tell us all we need to know about effective teachers and satisfactory learning, it does direct our attention to teacher actions associated with test scores that are higher than in classes where teachers do not take these actions. Conclusions from the many studies of teacher actions in the classroom can be summarized in different ways. One summary is provided here.

Goe, Bell, and Little evaluated the approaches used by effective teachers.¹

- Effective teachers believe their students are capable of learning and they can teach them successfully. If students do not learn from a lesson, these teachers teach it again using a different method and sometimes different materials.
- Effective teachers organize life in the classroom so that time is used for learning and students are not sitting at their desks with nothing to do, roaming around the room, or chatting with another student.
- Effective teachers move through the curriculum at a pace that challenges students to keep up but do so in relatively small steps to minimize frustration and allow continuous progress.
- Effective teachers are active teachers in that they demonstrate skills, explain concepts, design problems for students to solve, and review regularly. They emphasize understanding and application of knowledge. They provide ample opportunity for practice. They encourage students to take personal responsibility for learning. They move around the classroom continuously to maintain contact with students.

¹ L. Goe, C. Bell, and O. Little, *Approaches to Evaluating Teacher Effectiveness: A Research Synthesis* (Washington, DC: National Comprehensive Center for Teacher Quality, 2008).

² J. D. Greenberg, 'How Do We Value Teaching: Voices of the Students', *The National Teaching and Learning Forum, Supplemental Material*, 8 (1999), 2–3. Available at www.ntlf.com/html/lib/suppmat/82green.htm

For a student's perspective on effective teachers, review 'How Do We Value Teaching: Voices of the Students' by J. D. Greenberg²

Read the article, and create a list of actions deemed effective by students.

You have now reviewed different perspectives of teachers' actions, both from classes in which students earn high test scores and graduate from secondary school. Read

the lists again and create one list that includes all of the actions, but do not repeat any action. Using the 'Teacher Observation Form' given to you by your teacher, create a checklist that you can use when you observe a teacher in a classroom.

Very important note to Student Teachers

From the point of view of Student Teachers, there are two important limitations to this research. First, both studies were conducted in schools in Western countries. However, the research is still relevant, as most of the conclusions are consistent with contemporary research on learning and the results are believed to be universal to all human learning.

Second, all of this research uses statistics that produce correlations. Correlations simply tell us that two events occur together. The statistic does not tell us that one event is causing the other to occur. As such, we know that students in classrooms where teachers engage in these actions earn higher test scores than students in classrooms where teachers do not engage in these actions. However, we do not know which, if any, of these actions *cause* higher test scores.

As indicated earlier, findings from this research are consistent with evidence about some universal principles of learning. If you understand that the teacher actions summarized here are not causally related, you can use the research to guide your observations of teacher actions in the classroom with confidence.

Principles and Procedures of Classroom Observation



During the second week of this course, you are required to observe two primary school classrooms. In each classroom, you will observe the teacher using a checklist of teacher actions that you helped create. You must arrange the observations so that you are in the classroom when a lesson begins and stay there until it ends. One observation should take place in a lower primary school class (classes 1–3) and the other in a class with older students (classes 4–8). The lessons you observe must be from different school subjects. You should expect to conduct both observations in one day.

Teachers can be excellent sources of learning, so you will observe in groups of three and, hopefully, stay in the same group throughout the semester. This means that all three of you will be watching the same lesson at the same time, and each of you will be using your own form to record observations. You will need a watch for the observation unless the classroom has a wall clock.

‘Teacher Observation Form’

At the top of the ‘Teacher Observation Form’, enter the date, your name, the class and subject you are observing, the number of students in the class, and the time the lesson begins and ends. It will be helpful if you also write the topic of the lesson at the top of the page and whether this is a whole-class or small-group lesson.

As the form indicates, you will observe in five-minute intervals. This means that during each five-minute period of the lesson, you will look at the list of teacher behaviours on the form (more about that later) and tick each behaviour you see. Make one tick per box. If you do not see the behaviour, leave the box empty.

Start the observation in first column, and every five minutes move to the next column until the lesson ends. If a lesson ends in 15 minutes, you will mark three columns; if a lesson ends in 45 minutes, you will mark nine columns. The longer you observe, the more you will learn about the teacher’s actions. Try to observe lessons that last at least 25 minutes.

Adding teacher behaviours to the form

‘Summary of Conclusions from Teacher Effectiveness Research’ summarizes a large body of research that documents teacher actions in a classroom that are associated with high student achievement. The purpose of observing two classes is to give you a chance to see these actions in operation as well as other actions selected by the teachers you observe.

Your job is to study the summary, make a list of the behaviours based on the summary and the ‘Sample List of Teacher Actions’, and enter that list on your form. You will receive guidance about this in class. The final decision about the entries on the list will be a group decision so that everyone in the class is observing with the same

list. Write sentences that are short enough to fit easily into the spaces on the ‘Teacher Observation Form’. You have 12 spaces but you do not have to use all of them. (If the teachers you watch do not employ any of the actions on the list or only a few of them, describe what they do on the back of the form or a separate piece of paper.)

Thinking about what you saw

Spend a little time talking with the teacher before you leave the classroom. In a very few minutes, you should find out about the teacher’s beliefs about effective teaching.

Then, find a quiet place where you and your partners can compare your forms and talk about what you saw. This is important because observation alone is not a very useful way to learn about teaching; thinking about what you have observed and discussing it with others helps you gain perspective.

Make notes about your discussion because after the second observation, you will write a one- or two-page paper describing what you learned from these observations. Remember that this exercise is about observing teachers, not judging them. Teacher actions in this context are neither ‘good’ nor ‘bad’. This exercise simply involves watching what the decisions they make when they teach.

You have two partners and two classes in which you have been given permission to observe. You know when you must be in each classroom. You understand the observation form and have completed it with a list of teacher behaviours to look for. You are ready to go. If you can find a clipboard, take it with you. A clipboard will make it easier to fill out the form.

A few rules

Classrooms are busy places. Observers can distract the students and disturb classroom routine. Because there are three of you there at one time, be very careful that your presence does not interrupt a lesson. If you follow a few simple rules, you will be doing a favour for the teacher and students.

Before coming to the classroom to observe, talk with the teacher about where you should sit, how you will be introduced to the students, and what you should do if students try to talk with you when they should be paying attention to the lesson.

Do not initiate contact with students. This will be hard because they are curious and will be interested in you and you in them. It is very easy though to be drawn into long conversations and to be asked for help with a worksheet or other individual assignment. Private interactions between a student and an observer interfere with the teacher’s control of the class.

Do not talk with your partners during a lesson or pass notes to each other. Also try not to make unexpected loud noises like scraping a chair across the floor or loudly ripping pages out of a notebook. Have extra paper prepared if you think it will be needed.

You will learn more about life in classrooms if you get to see the classroom as it is every day rather than if that natural state is disrupted by your presence.



Teacher Observation Form

Date _____ Observer _____

Class (1–8) _____ Start _____

Subject _____ End _____

Number of students _____

Five-minute periods										Teacher behaviours
1	2	3	4	5	6	7	8	9	10	

Observation notes





Direct Instruction

Direct instruction is one of several educational theories that provide knowledge about teaching. A brief summary is included in this Unit to illustrate what people mean when they talk about educational theories. You will encounter this theory again later in this and subsequent courses.

Direct instruction is a theory of education based on the assumption that the best way to teach is with scripted lesson plans that cannot be changed. Critics argue direct instruction gives total control of lessons to the teacher. Students are not allowed to learn by exploration, and discussion is not included in the lessons.

Steps in a direct instruction lesson

Introduction/review. The first step is for the teacher to gain the students' attention. Students are told what they will know or be able to do by the end of a lesson and why the knowledge or skill is important to them. This step can be in the form of review and eliciting prior knowledge or it can be an introduction to new information.

Development of lesson. Once it is clear that students understand what they will have learnt from the lesson, the teacher should show them the learning outcome by modelling what they will know or be able to do. This step includes clear explanations and lots of examples, both verbal and visual. It is a small lecture. The teacher continuously checks for understanding by asking questions and encouraging students to ask questions if they do not understand.

Guided practice. When the teacher is confident that students understand what they are expected to learn, they begin to practise under the strict guidance of the teacher.

Closure. After a sufficient number of error-free trials, the teacher reviews the lesson, including the learning outcome, and assigns independent practice worksheets.

Evaluation. Student progress is assessed during the lesson and/or as a culminating event. For students who have not learnt the relevant information or skill, the lesson is repeated.

Although there are direct instruction lessons for reasoning and comprehension, this theory is most effective for learning basic skills in reading, mathematics, spelling, and handwriting.

Social Constructivist Learning Theory



NOTE: This is a simple version of a complex theory that you will study in the Child Development course. It is included here because it is a prominent theory about how children learn. Learning theories are one of the sources that teachers use to help them make decisions about teaching. Because you are studying those sources of knowledge, it is important for you to understand what people mean when they refer to 'learning theory'. Social constructivism is just one of several theories (ideas) about how people learn.

Constructivism is the belief that the human mind is active even at the time of birth. All children, including newborns, want to understand what they see, hear, and touch. Their brains are actively trying to make connections between experiences.

Their first success, usually, is recognizing their mother's face and voice. Think of your own mind. Isn't something happening there most of the time? Think of your mind while you are studying or trying to solve a problem in your daily life. Your mind is active; you are thinking. You aren't just waiting for something to happen. The principle here is that learning is the outcome of a mind at work trying to make sense of experience. Jean Piaget was the first constructivist theorist.

Social constructivism is a theory created by the Russian psychologist Lev Vygotsky (1896–1934). Vygotsky believed that children construct knowledge from experience, but he added another dimension to that theory. He believed that children learn through joint problem-solving experiences with someone who knows more than the child. He believed that children learn through interactions with other people. According to Vygotsky, all learning occurs through social interaction. The more experienced person is responsible for the child's learning initially and then gradually steps back as the child assumes more and more responsibility for learning. The final responsibility for acquiring the knowledge and skills society views as important must be assumed by the child. However, other people start it with cues, prompts, models, explanations, demonstrations, and questions.



Seven Principles of Learning

NOTE: This handout complements Dr Stella Vosniadou's booklet, *How Children Learn*. This handout highlights principles of learning whereas Dr Vosniadou combines principles with classroom recommendations. Consider reviewing *How Children Learn* as reference for teaching and to gain a better understanding of how to apply these principles.

'Learning results from what the student does and thinks and only what the student does and thinks. The teacher can advance learning only by influencing what the student does to learn.'

–Herbert A. Simon, Nobel Laureate in Economics and a founder of the field of cognitive science

Learning defined

Learning is a *process*, not a *product*. Learning involves change in knowledge, beliefs, behaviours, or attitudes. Change produced by learning has a lasting impact on how students think and act. Learning is not something done *to* students, but rather something students themselves do. It is a direct result of how students interpret and respond to their experiences.

The seven principles

- Students' prior knowledge can help or hinder learning.
- How students organize knowledge influences how they learn and apply what they know.
- Students' motivation determines, directs, and sustains what they do learn.
- To develop mastery, students must acquire component skills, practise integrating them, and know when to apply what they have learnt.
- Goal-directed practice coupled with targeted feedback enhances the quality of students' learning.
- Students' current level of development interacts with the social, emotional, and intellectual climate of the course to impact learning.
- To become self-directed learners, students must learn to monitor and adjust their strategies for learning.

Recitation and Discussion Require Different Questions



Questions are a very common event in primary school classrooms. Observers in primary schools in some English-speaking countries have counted as many as 84 questions, most asked by teachers, in one hour. There are estimates that as many as 1000 questions may be asked in primary school classrooms in the course of one day! Some of these questions are procedural, such as ‘Did everyone bring their homework back to school this morning?’ However, most questions occur in lessons with learning goals as one of two types of teaching methods: recitation and discussion.

You have already studied discussion as a teaching method. The purpose here is to contrast discussion with recitation. At first glance the two methods look quite similar – both involve talk between a teacher and students. But recitation and discussion have different learning goals and use different types of questions. Both types of talk between and among a teacher and students have their place in classrooms.

Recitation

Recitation is a way of finding out what students know. The talk between a teacher and students is more like a quiz show than a conversation. The teacher asks a question and calls upon one student to answer. The teacher evaluates the answer and asks another question. Here is an example of a recitation from a fourth grade class in which students are studying *Androcles and the Lion*, the story of an escaped slave who earned a lion’s gratitude for removing a large thorn from one of the lion’s paws:

Teacher: OK, let’s start from the beginning. What is the slave’s name?

Student 1: Androcles?

Teacher: Right. Now how was Androcles treated by his master?

Student 2: Cruelly.

Teacher: Good. So what did Androcles do?

Student 3: He escaped.

Teacher: Ah, yes. He escapes and heads for the forest. He is wandering around and he meets a...a what, Jane?

Student 4: A lion.

Teacher: Yes, a lion. And something’s wrong with the lion. What’s wrong, Ari?

Student 5: He has a cut in his paw.

- Teacher:** Not exactly a cut. Tasheika?
- Student 6:** A thorn is stuck in his paw.
- Teacher:** Absolutely. A thorn. And this moaning, whimpering, distressed lion holds out his paw for Androcles and Androcles does what?
- Student 7:** Takes the thorn out.
- Teacher:** Right – and the lion is what, class?
- Students:** (silence)
- Teacher:** How does the lion feel toward Androcles?
- Students:** (Students murmur a variety of responses.) Grateful. Happy. Loving. The lion likes Androcles.

This example of a recitation illustrates that the talk with students is controlled by the teacher who asks the questions and evaluates the students' answers. You can also see that the students' answers are brief (usually one word), and you can assume that the pace of the lesson is fast. You can also see that each question has only one right answer.

Let's look at a second example of a recitation involving a book students are reading, *The Cay*. This one shows what can be done with recitation in addition to assessing students' knowledge.

- Teacher:** Let's review what you read last night. First of all, what is a cay?
(One girl raises her hand.) Only one person? (A few more students raise their hands.) Maggie?
- Student 1:** An island.
- Teacher:** Any particular kind of island?
- Student 2:** A very small island.
- Teacher:** OK. Where is the island in our story?
- Student 3:** It's near Aruba.
- Teacher:** Good. What else?
- Student 4:** In the Caribbean.
- Teacher:** OK. (The teacher tells students to locate the island on their individual maps. When she is satisfied that everyone has located the island, she continues.) This story takes place at what time in history?

- Student 5:** 1942.
- Teacher:** Good. What important thing was happening then?
- Student 6:** It was the middle of World War II.
- Teacher:** Where did most of the fighting take place in World War II?
- Student 7:** Europe.
- Teacher:** OK, but are they in Europe?
- Student 8:** No.
- Teacher:** Then why is this little island in the Caribbean affected?
- Student 9:** It's a world war so it affects lots of places.
- Teacher:** True, but why this place?
- Student 10:** Because there are three submarines there.
- Teacher:** But why?
- Student 11:** Because of a supply of oil there.
- Teacher:** So what? Why is oil important?
- Student 12:** It's worth a lot of money.
- Teacher:** Why?
- Student 13:** Because it is rare and we need it.
- Teacher:** OK, it's an important natural resource that's not plentiful everywhere.

The teacher who taught this lesson acknowledges that it is a recitation rather than a discussion and that it is controlled by the teacher. The class is preparing to discuss and critique a novel. In order to do that, the students need to have the story's context. The teacher's major goal with this recitation was to assure that everyone had the story's specific background facts; this was done by asking the students questions rather than giving them those facts. The students' answers also allow the teacher to know what prior knowledge students bring to their interpretation of the novel and to correct any misconceptions they may have.

Discussion

Discussion is a form of verbal interaction in which students work together to consider an issue or a question. It is intended to stimulate a variety of responses, to encourage students to consider different points of view, to foster problem-solving, to examine implications, and to relate material to personal experience.

The students whose discussion is excerpted below have just read *Buford the Little Bighorn*, a story about a little mountain sheep with huge horns that cause him considerable trouble throughout the story. At the very end of the story Buford discovers that his horns have some use after all. The students are discussing whether Buford will ever consider returning them to a normal size.

Teacher: My ladies and gents, let's review how to behave in a discussion. If someone's talking, we don't cut them off, right? Raise your hand and I will recognize you. Remember, you can't just say, 'I agree' or 'I disagree'. You have to be able to defend your answer.

What does that mean? Sheneika?

Student 1: You have to convince people you are right.

Teacher: OK, you have to give reasons why you think what you think. You have to explain. Luis, you want to start us off, tell us what you think, and give us some supporting argument

Student 2: Yes.

Teacher: Yes, should he get his horns trimmed? (Luis nods.) Why do you say yes?

Student 2: 'Cause they are too long and if he falls down he will get hurt.

Student 3: I disagree. In the story, when he fell, he ended up hanging on a tree. So the horns helped him.

Student 4: I disagree 'cause the horns made him fall in the first place. He should take off his horns so the hunters won't get to him.

Student 5: I agree with Luis. If Buford don't get his horns cut, he'll trip and get hurt.

Student 6: I agree with Luis, too. He'll fall if he don't get them cut.

Student 1: I disagree, because Buford, when he was walking, he fell, and his horns saved him.

Student 3: Yeah, and if he get his horns cut off, then the folks from all over the world won't come and he won't be a big star.

Teacher: Do you want to say something, James?

Student 7: I don't want him to get his horns cut off because then he won't be able to ski.

It is clear that these young students are just beginning to learn how to conduct a discussion. You can still see differences from recitation, however. Students are the dominant speakers in a discussion. The dialogue is a mix of questions and statements. The answers are longer and we assume the pace of the discussion is slower than for recitation.

The purpose of a discussion is to encourage students to think critically and consider different points of view. There is no single right answer or conclusion. There can be as many conclusions as there are students as long as each conclusion has been explained and/or defended. Students participate in the evaluation of answers and conclusions.

Recitation depends primarily on questions formed at the knowledge level of the cognitive hierarchy while discussion depends on questions formed at higher levels of the hierarchy. Discussions can easily turn into recitations unless discussion-appropriate questions (i.e. questions that elicit more than a yes or no answer) are used. The following questions types are appropriate for discussions:

Questions that ask for more evidence

How do you know that?

What does the author say that supports your argument?

Questions that ask for clarification

What do you mean by that?

Can you say that another way?

Hypothetical questions

What might have happened if Joey hadn't missed the bus?

Cause-and-effect questions

How might that rumour affect the school play?

Summary and synthesis questions

What did you learn from this discussion?

What is the most important idea that came from this discussion?

Resources

S. D. Brookfield and S. Preskill, *Discussion as a Way of Teaching* (2nd edn.) (San Francisco: Jossey-Bass, 2005).

J. T. Dillon, *Questioning and Teaching: A Manual of Practice* (New York: Teachers College Press, 1988).

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Learning Goals vs. Activities and Assignments



Following are statements from different subject areas. Some are more clearly learning goals; others are more clearly activities or assignments. After each statement, identify whether it is better classified as a learning goal or an activity or assignment.

1. Students will be able to recognize the protagonist, theme, and voice of a piece of literature.
2. Students will produce a book report on a book of their choice, including a table of contents, with proper pagination and format throughout.
3. Given a set of coordinates, students will be able to graph the slope of a line.
4. Students will compare and describe the slopes of two lines.
5. Students will understand the differences and similarities between metamorphic, igneous, and sedimentary rock.
6. Students will understand how the Borgia family influenced the Renaissance.
7. Students will be able to explain how the problems created by the French and Indian War contributed to causes of the American Revolution.
8. Students will produce a play dramatizing the problems created by the French and Indian War and how they contributed to causes of the American Revolution.
9. Students will understand that matter is made up of atoms and that atoms, in turn, are made up of subatomic particles.
10. Students will write a paper describing the relationships among atoms and subatomic particles.

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The Concept of Formative Assessment



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While many educators are highly focused on state tests, it is important to consider that over the course of a year, teachers can build in many opportunities to assess how students are learning and then use this information to make beneficial changes in instruction. This diagnostic use of assessment to provide feedback to teachers and students over the course of instruction is called formative assessment. It stands in contrast to summative assessment that generally takes place after a period of instruction and requires making a judgment about the learning that has occurred (e.g., by grading or scoring a test or paper). This article addresses the benefits of formative assessment and provides examples to support its implementation.

Purpose and benefits of formative assessment

Black and Wiliam (1998b) define assessment broadly to include all activities that teachers and students undertake to get information that can be used diagnostically to alter teaching and learning. Under this definition, assessment encompasses teacher observation, classroom discussion, and analysis of student work, including homework and tests. Assessments become formative when the information is used to adapt teaching and learning to meet student needs.

When teachers know how students are progressing and where they are having trouble, they can use this information to make necessary instructional adjustments, such as re-teaching, trying alternative instructional approaches, or offering more opportunities for practice.

These activities can lead to improved student success.

Black and Wiliam (1998a) conducted an extensive research review of 250 journal articles and book chapters winnowed from a much larger pool to determine whether formative assessment raises academic standards in the classroom. They concluded that efforts to strengthen formative assessment produce significant learning gains as measured by comparing the average improvements in test scores of the students involved in instruction that included formative assessment with the average improvements in scores found for groups of students receiving instruction that did not include formative assessment. Average improvements in scores were significantly higher for the groups whose instruction included formative assessment than for those groups of students who did not receive formative assessment.

Feedback given as part of formative assessment helps students become aware of any gaps that exist between their desired learning goal and their current knowledge, skill

or understanding and guides them through actions necessary to obtain the goal. The most helpful type of feedback on tests and homework is specific comments about errors and specific actions to take to fix them. Comments encourage students to focus attention thoughtfully on the task rather than simply getting the right answer. It may be particularly helpful to lower achieving students because it emphasizes that students can improve as a result of effort rather than be doomed to low achievement due to some presumed lack of ability. Formative assessment helps support the expectation that all children can learn to high levels and counteracts the cycle in which students attribute poor performance to lack of ability and become discouraged and unwilling to try to learn.

While feedback generally originates from a teacher, students can also play an important role through self-assessment. Research shows that students who understand the learning objectives and assessment criteria and have the opportunity to reflect on their work show greater improvement than those who do not.

Examples of formative assessment

Since the goal of formative assessment is to gain an understanding of what students know (and don't know) in order to make responsive changes in teaching and learning, techniques such as teacher observation and classroom discussion have an important place alongside analysis of tests and homework.

Black and Wiliam (1998) encourage teachers to use questioning and discussion to increase students knowledge and improve their understanding. They caution, however, that teachers need to make sure to ask thoughtful, reflective questions rather than simple, factual ones and then give students adequate time to respond. In order to involve everyone, they suggest strategies such as the following:

- Invite students to discuss their thinking about a question or topic in pairs or small groups, then ask a representative to share the thinking with the larger group. (This is usually called think-pair-share.)
- Present several possible answers to a question, then ask students to vote on them.
- Ask all students to write down an answer, then read a selected few out loud.
- Have students write their understanding of vocabulary or concepts before and after instruction.
- Ask students to summarize the main ideas they have taken away from a lecture, discussion, or assigned reading.
- Have students complete a few problems or questions at the end of instruction and check answers.
- Interview students individually or in groups about their thinking as they solve problems.
- Assign brief, in-class writing assignments (e.g., 'Why is this person or event representative of this time period in history?')

In addition to these classroom techniques, tests and homework can be used as formative assessment if teachers analyze where students are and provide specific, focused feedback regarding performance and ways to improve it. Black and Wiliam (1998b) make the following recommendations:

- Frequent short tests are better than infrequent long ones.
- New learning should be tested within about a week of first exposure.
- Be mindful of the quality of test items and work with other teachers and outside sources to collect good ones.

Portfolios, or collections of student work, may also be used formatively if students and teachers annotate the entries and observe growth over time and practice.

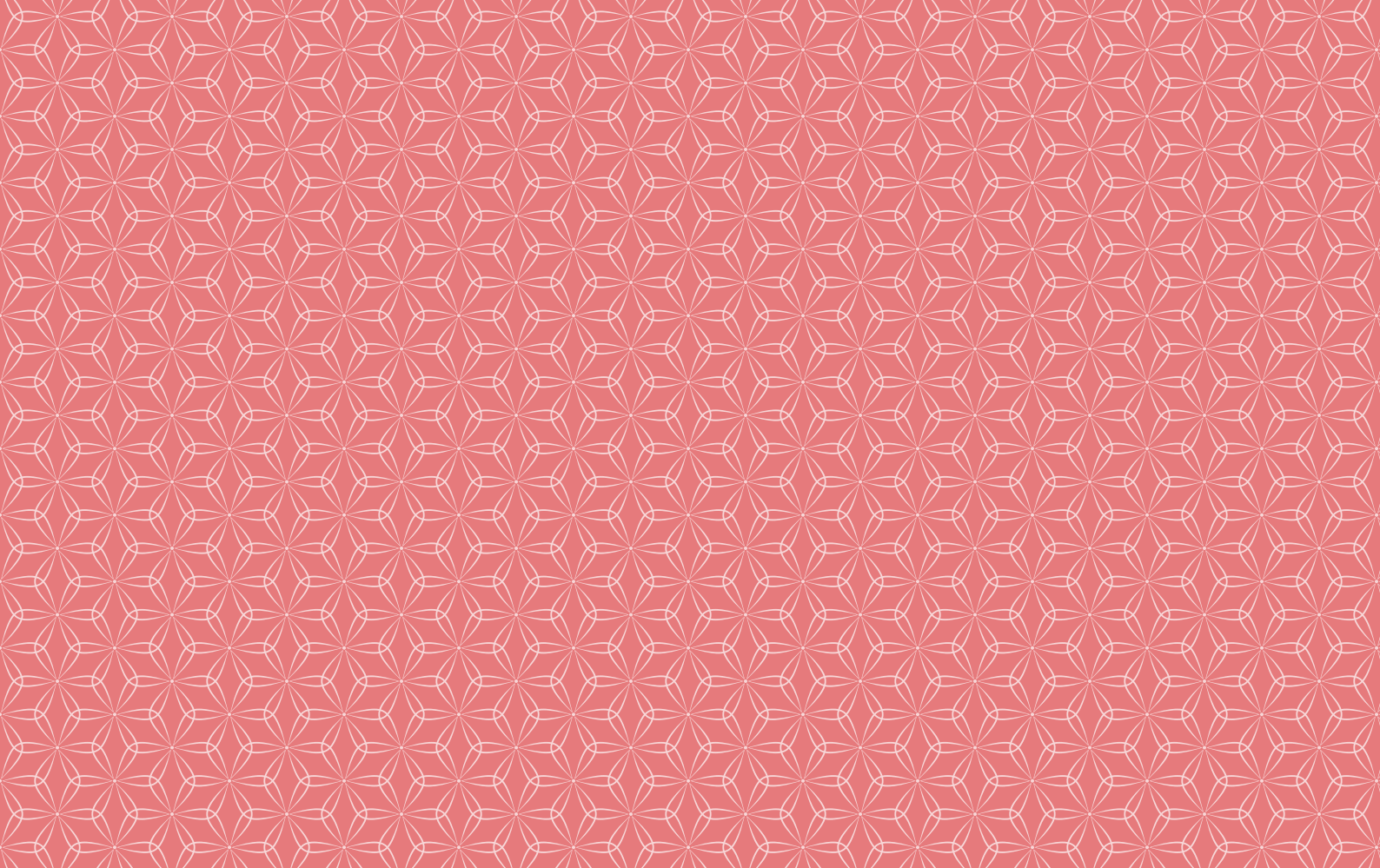
This has been prepared for pre-service teachers. Black and Wiliam (1998b) recommend setting up local groups of in-service teachers to work on formative assessment at the school level along with neighboring local schools. These authors have done this with secondary math and science teachers and know that teachers can be very helpful to each other.

Teachers generally need to undertake or participate in some summative assessment as a basis for reporting grades. However, the task of formative assessment for external purposes remains quite different from the task of formative assessment to monitor and improve progress. While summative assessments provide a snapshot of a student's performance on a given day under test conditions, formative assessment allows teachers to monitor and guide student's performance over time in multiple problem-solving situations. Future research might examine how teachers deal with the relationship between their formative and summative roles, how teachers' classroom assessments relate to external test results, and how external (summative) test results can be made more helpful in terms of improving student performance.

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